Models:

A5CM□20□E/ER
A5CM□25□E/ER
A5CM□28□E/ER

ACSON International

Ceiling Convertible Split Systems

ACM - E- 2006

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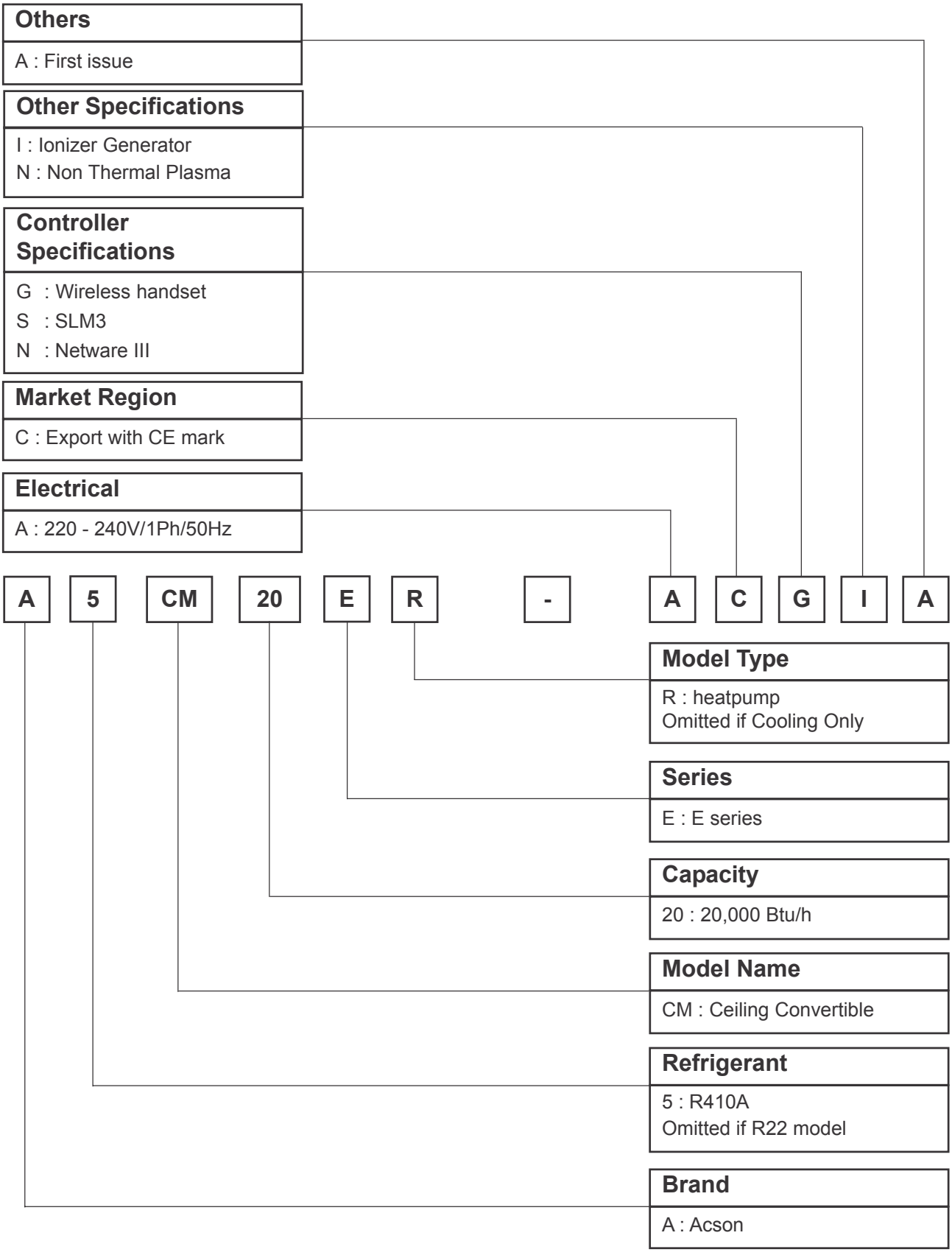
1. NOMENCLATURE

Indoor



Outdoor

Others
A : First issue

Air Treatment Devices & Control	
O : Standard unit B : With Contactor G : Low Ambient Unit H : High ambient unit	I : Gold Fin L : Long Piping Unit S : With H/L Pressure Switch X :Oxygen Unit

Contoller Type	
P : Matsushita Rotary M :Mitsubishi Rotary	T : Toshiba Rotary

Market Region
C : Export with CE marking E : Export without marking U : ETL Spec.

Electrical
A : 220 - 240V/1Ph/50Hz

A	5	LC	20	C	R	-	A	C	P	O	A

Model Type
R : heatpump Omitted if Cooling

Series
C : C series

Capacity
20 : 20,000 Btu/h

Model Name
LC : Single Split Condensing unit

Refrigerant
5 : R410A Omitted if R22 model

Brand
A : Acson

2. FEATURES

CEILING AND FLOOR INSTALLATION OPTION

The unit is uniquely designed with the option to install either below the ceiling or mounted at low wall position without any modification needed. Furthermore, the unit is design adds a touch of elegance to suit any interior design requirement

EXCELLENT AIR DISTRIBUTION

The louver with automatic air swing function fully optimize the room comfort by enables the air flow to be evenly distributed into the room from the front discharge area.

NEGATIVE ION GENERATOR

Acson emphasis on provide indoor air quality solution. Therefore, the negative ionizer technology is being brought in as an essential part of the unit. The negative ion generator increases the amount of negative ion in the air-conditioning area, creating a refreshing and healthy living environment.

EASY INSTALLATION

The ceiling convertible fan coil unit is easily installed with a very economical and space saving installation. No need renovation on wall or ceiling for installation. This easy to install and ready to operate unit ensure rapid and low installation cost.

MAGNIFICENT SERVICEABILITY

The blower, fan motor assembly and electrical parts can be inspected and air filter can be accessed by pulling down the air intake grille. During servicing or repairing, only the bottom panel needs to be removed in order to access the fan motor, blower, control box piping connection and drain pan.

WIRELESS REMOTE CONTROLLER

The standard unit comes with a simple, user friendly and stylish wireless controller. The G12 controller offers many features:

- The compact LCD transmitter is able to operate the indoor unit within 9 meters of distance.
- Fan speed can be set at low/medium/high or automatic.
- Sleep mode auto control will gradually increase or decrease the set temperature to provide a comfortable surrounding for sleeping.
- The real time timer allows the unit to be switched ON and OFF automatically based on user settings.
- Ionizer or non-thermal plasma is available to create better air quality.
- Turbo mode function is available to enables the required set temperature to be achieved in a short time.
- Personalized Setting allows user to preset and store 2 groups of personal settings (including timer setting) in the handset.

AUTO RANDOM RESTART

Auto random restart function allows the unit to automatic restart as the last setting condition when the power supply is resumed after power failure. However, the compressor will restart randomly if more than one unit is installed and sharing the same phase of power.

SELF DIAGNOSIS

The microprocessor provides the possibility to detect and diagnose any fault or malfunction that occurs in the system. The error will be reflected by the blinking of the LED lights.

3. PRODUCT LINE UP

INDOOR UNIT
ACM-E SERIES PRODUCT LINE UP

ACM		Nomenclature	Classification										
			Control Module	Handset			Marking		Fin	Ionizer	NTP	Refrigerant Control	
			L2	SLM3	Netware III	G12 Handset	CE Mark	W/out Marking	Hydrophilic (SLIT)			Cap. Tube	W/out Cap. Tube
Cooling Model	20E	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	25E	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	28E	ACGIA	X			X	X		X	X		X	
		ACGNA	X			X	X		X		X	X	
Heat Pump Model	20ER	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	25ER	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	28ER	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X

A5CM-E SERIES PRODUCT LINE UP

A5CM		Nomenclature	Classification										
			Control Module	Handset			Marking		Fin	Negative Ionizer	NTP	Refrigerant Control	
			L2	SLM3	Netware III	G12 Handset	CE Mark	W/out Marking	Hydrophilic (SLIT)			Cap. Tube	W/out Cap.Tube
Cooling Model	20E	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	25E	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	28E	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
Heat Pump Model	20ER	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	25ER	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X
	28ER	ACGIA	X			X	X		X	X			X
		ACGNA	X			X	X		X		X		X

OUTDOOR UNIT
A5LC-C SERIES PRODUCT LINE UP

A5LC		Nomenclature	Classification														
			Refrigerant Ctrl + Fin			Special		Safety Devices					Grille	Compressor		Marking	
			Cap. Tube	TXV	Gold Fin	High Ambient Kit	Low Ambient Kit	Contactor	High Pressure Switch	Low Pressure Switch	Nantong Press. SW	Phase Sequencer	Drain Elbow	Copeland Scroll Comp.	Rotary	CE Marking	ETL
Cooling Model	20C	ACPOA	X												X	X	
	25C	ACPOA	X												X	X	
	28C	ACPOA	X												X	X	
	35C	FCCOA	X	X				X	X	X	X	X		X		X	
Heat Pump Model	20CR	ACPOA	X												X	X	
	25CR	ACPOA	X												X	X	
	28CR	ACPOA	X												X	X	
	35CR	FCCOA	X	X				X	X	X	X	X	X	X		X	

General Data - Cooling Only (R410A)

MODEL		INDOOR UNIT			A5CM 20E	A5CM 25E
		OUTDOOR UNIT			A5LC 20C	A5LC 25C
NOMINAL CAPACITY				Btu/h	17500	20000
				W	5130	5860
NOMINAL TOTAL INPUT POWER				W	1723	1973
NOMINAL RUNNING CURRENT				A	7.6	8.9
POWER SOURCE				V/Ph/Hz	220 - 240 / 1 / 50	
REFRIGERANT TYPE / CONTROL					R410A / OUTDOOR CAP. TUBE	
INDOOR UNIT	CONTROL	AIR DISCHARGE			AUTOMATIC LOUVER (UP & DOWN)	
		OPERATION			WIRELESS OR WIRED MICROCOMPUTER REMOTE CONTROL	
	AIR FLOW	HIGH		l/s / CFM	245 / 520	274 / 580
		MEDIUM		l/s / CFM	217 / 460	250 / 530
		LOW		l/s / CFM	192 / 406	231 / 490
	EXTERNAL STATIC PRESSURE (H/M/L)			Pa / in.wg.	0	0
	SOUND PRESSURE LEVEL (H/M/L)			dBA	48 / 46 / 43	50 / 47 / 46
	UNIT DIMENSION	HEIGHT		mm/in	218 / 8.58	
		WIDTH		mm/in	1080 / 42.52	
		DEPTH		mm/in	630 / 24.80	
	PACKING DIMENSION	HEIGHT		mm/in	297 / 11.69	
		WIDTH		mm/in	1197 / 47.13	
		DEPTH		mm/in	740 / 29.13	
	UNIT WEIGHT			kg/lb	27 / 60	
	CONDENSATE DRAIN SIZE			mm/in	19.05 / 3/4	
OUTDOOR UNIT	AIR FLOW			l/s / CFM	614 / 1300	689 / 1460
	SOUND PRESSURE LEVEL			dBA	52	52
	UNIT DIMENSION	HEIGHT		mm/in	648 / 25.5	750 / 29.5
		WIDTH		mm/in	855 / 33.7	855 / 33.7
		DEPTH		mm/in	328 / 12.9	328 / 12.9
	PACKING DIMENSION	HEIGHT		mm/in	710 / 28.0	810 / 31.9
		WIDTH		mm/in	990 / 39.0	990 / 39.0
		DEPTH		mm/in	415 / 16.3	415 / 16.3
	UNIT WEIGHT			kg/lb	59 / 130.1	62 / 136.7
	PIPE CONNECTION	TYPE			FLARE VALVE	
		SIZE	LIQUID	mm/in	6.35 / 1/4	6.35 / 1/4
			GAS	mm/in	12.70 / 1/2	15.88 / 5/8
REFRIGERANT CHARGE				kg/lb	1.40 / 3.09	1.75 / 3.86

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151.
3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
COOLING - 27°C DB / 19°C WB INDOOR AND 35°C DB / 24°C WB OUTDOOR
4) SOUND PRESSURE LEVEL ARE ACCORDING TO JIS B 8615 STANDARD. POSITION OF THE MEASUREMENT POINT IS 1m IN FRONT AND 1m BELOW THE UNIT.
5) SOUND SPECTRUM FOR A5CM 20/25E IS NOT READY AT THE TIME OF PRINTING.
6) ALL SPECIFICATIONS ARE TENTATIVE SPECIFICATIONS AT THE TIME OF PRINTING. PLEASE CONSULT YOUR DEALER FOR CONFIRMATION.

General Data - Cooling Only (R410A)

MODEL		INDOOR UNIT			A5CM 28E	
		OUTDOOR UNIT			A5LC 28C	A5LC 35C
NOMINAL CAPACITY				Btu/h	27000	30000
				W	7900	8790
NOMINAL TOTAL INPUT POWER				W	2754	2784
NOMINAL RUNNING CURRENT				A	13.0	5.3
POWER SOURCE				V/Ph/Hz	220 - 240 / 1 / 50	380 - 415 / 3 / 50
REFRIGERANT TYPE / CONTROL					R410A / OUTDOOR CAP. TUBE	R410A / OUTDOOR CAP. TUBE & TXV
INDOOR UNIT	CONTROL	AIR DISCHARGE			AUTOMATIC LOUVER (UP & DOWN)	
		OPERATION			WIRELESS OR WIRED MICROCOMPUTER REMOTE CONTROL	
	AIR FLOW	HIGH		l/s / CFM	293 / 620	
		MEDIUM		l/s / CFM	269 / 570	
		LOW		l/s / CFM	245 / 520	
	EXTERNAL STATIC PRESSURE (H/M/L)			Pa / in.wg.	0	
	SOUND PRESSURE LEVEL (H/M/L)			dBA	51 / 48 / 47	
	UNIT DIMENSION	HEIGHT		mm/in	218 / 8.58	
		WIDTH		mm/in	1080 / 42.52	
		DEPTH		mm/in	630 / 24.80	
	PACKING DIMENSION	HEIGHT		mm/in	297 / 11.69	
		WIDTH		mm/in	1197 / 47.13	
		DEPTH		mm/in	740 / 29.13	
	UNIT WEIGHT			kg/lb	28 / 62	
	CONDENSATE DRAIN SIZE			mm/in	19.05 / 3/4	
OUTDOOR UNIT	AIR FLOW			l/s / CFM	741 / 1570	1605 / 3400
	SOUND PRESSURE LEVEL			dBA	54	58
	UNIT DIMENSION	HEIGHT		mm/in	750 / 29.5	850 / 33.46
		WIDTH		mm/in	855 / 33.7	1030 / 40.55
		DEPTH		mm/in	328 / 12.9	400 / 15.75
	PACKING DIMENSION	HEIGHT		mm/in	810 / 31.9	1000 / 39.37
		WIDTH		mm/in	990 / 39.0	1200 / 47.24
		DEPTH		mm/in	415 / 16.3	560 / 22.05
	UNIT WEIGHT			kg/lb	68 / 149.9	95 / 209.4
	PIPE CONNECTION	TYPE			FLARE VALVE	
		SIZE	LIQUID	mm/in	9.52 / 3/8	9.52 / 3/8
			GAS	mm/in	15.88 / 5/8	15.88 / 5/8
REFRIGERANT CHARGE				kg/lb	1.80 / 3.97	1.90 / 4.19

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
COOLING - 27°C DB / 19°C WB INDOOR AND 35°C DB / 24°C WB OUTDOOR
4) SOUND PRESSURE LEVEL ARE ACCORDING TO JIS B 8615 STANDARD. POSITION OF THE MEASUREMENT POINT IS 1m IN FRONT AND 1m BELOW THE UNIT.
5) SOUND SPECTRUM FOR A5CM 28E IS NOT READY AT THE TIME OF PRINTING.
6) ALL SPECIFICATIONS ARE TENTATIVE SPECIFICATIONS AT THE TIME OF PRINTING. PLEASE CONSULT YOUR DEALER FOR CONFIRMATION.

General Data - Heatpump (R410A)

MODEL		INDOOR UNIT			A5CM 20ER	A5CM 25ER
		OUTDOOR UNIT			A5LC 20CR	A5LC 25CR
NOMINAL COOLING CAPACITY				Btu/h	17500	20000
				W	5130	5860
NOMINAL HEATING CAPACITY				Btu/h	18500	22000
				W	5420	6450
NOMINAL TOTAL INPUT POWER (COOLING)				W	1723	1973
NOMINAL TOTAL INPUT POWER (HEATING)				W	1493	2003
NOMINAL RUNNING CURRENT (COOLING)				A	7.6	8.9
NOMINAL RUNNING CURRENT (HEATING)				A	6.6	9.1
POWER SOURCE				V/Ph/Hz	220 - 240 / 1 / 50	
REFRIGERANT TYPE / CONTROL					R410A / OUTDOOR CAP. TUBE	
INDOOR UNIT	CONTROL	AIR DISCHARGE			AUTOMATIC LOUVER (UP & DOWN)	
		OPERATION			WIRELESS OR WIRED MICROCOMPUTER REMOTE CONTROL	
	AIR FLOW	HIGH		l/s / CFM	245 / 520	274 / 580
		MEDIUM		l/s / CFM	217 / 460	250 / 530
		LOW		l/s / CFM	192 / 406	231 / 490
	EXTERNAL STATIC PRESSURE (H/M/L)			Pa / in.wg.	0	0
	SOUND PRESSURE LEVEL (H/M/L)			dBA	48 / 46 / 43	50 / 47 / 46
	UNIT DIMENSION	HEIGHT		mm/in	218 / 8.58	218 / 8.58
		WIDTH		mm/in	1080 / 42.52	1080 / 42.52
		DEPTH		mm/in	630 / 24.80	630 / 24.80
	PACKING DIMENSION	HEIGHT		mm/in	297 / 11.69	297 / 11.69
		WIDTH		mm/in	1197 / 47.13	1197 / 47.13
		DEPTH		mm/in	740 / 29.13	740 / 29.13
	UNIT WEIGHT			kg/lb	27 / 60	27 / 60
	CONDENSATE DRAIN SIZE			mm/in	19.05 / 3/4	19.05 / 3/4
OUTDOOR UNIT	AIR FLOW			l/s / CFM	614 / 1300	689 / 1460
	SOUND PRESSURE LEVEL			dBA	52	52
	UNIT DIMENSION	HEIGHT		mm/in	648 / 25.5	750 / 29.5
		WIDTH		mm/in	855 / 33.7	855 / 33.7
		DEPTH		mm/in	328 / 12.9	328 / 12.9
	PACKING DIMENSION	HEIGHT		mm/in	810 / 31.9	810 / 31.9
		WIDTH		mm/in	990 / 39.0	990 / 39.0
		DEPTH		mm/in	415 / 16.3	415 / 16.3
	UNIT WEIGHT			kg/lb	59 / 130.1	62 / 136.7
	PIPE CONNECTION	TYPE			FLARE VALVE	
		SIZE	LIQUID	mm/in	6.35 / 1/4	6.35 / 1/4
			GAS	mm/in	12.70 / 1/2	15.88 / 5/8
REFRIGERANT CHARGE				kg/lb	1.40 / 3.09	1.75 / 3.86

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 27°C DB / 19°C WB INDOOR AND 35°C DB / 24°C WB OUTDOOR
b) HEATING - 20°C DB INDOOR AND 7°C DB / 6°C WB OUTDOOR
4) SOUND PRESSURE LEVEL ARE ACCORDING TO JIS B 8615 STANDARD. POSITION OF THE MEASUREMENT POINT IS 1m IN FRONT AND 1m BELOW THE UNIT.
5) SOUND SPECTRUM FOR A5CM 20/25ER IS NOT READY AT THE TIME OF PRINTING.
6) ALL SPECIFICATIONS ARE TENTATIVE SPECIFICATIONS AT THE TIME OF PRINTING. PLEASE CONSULT YOUR DEALER FOR CONFIRMATION.

General Data - Heatpump (R410A)

MODEL		INDOOR UNIT			A5CM 28ER	
		OUTDOOR UNIT			A5LC 28CR	A5LC 35CR
NOMINAL COOLING CAPACITY				Btu/h	27000	30000
				W	7900	8790
NOMINAL HEATING CAPACITY				Btu/h	27500	31000
				W	8050	9090
NOMINAL TOTAL INPUT POWER (COOLING)				W	2754	2784
NOMINAL TOTAL INPUT POWER (HEATING)				W	2455	2634
NOMINAL RUNNING CURRENT (COOLING)				A	13.0	5.3
NOMINAL RUNNING CURRENT (HEATING)				A	11.8	5.0
POWER SOURCE				V/Ph/Hz	220 - 240 / 1 / 50	380 - 415 / 3 / 50
REFRIGERANT TYPE					R410A / OUTDOOR CAP. TUBE	R410A / OUTDOOR CAP. TUBE & TXV
INDOOR UNIT	CONTROL	AIR DISCHARGE			AUTOMATIC LOUVER (UP & DOWN)	
		OPERATION			WIRELESS OR WIRED MICROCOMPUTER REMOTE CONTROL	
	AIR FLOW	HIGH		l/s / CFM	293 / 620	
		MEDIUM		l/s / CFM	269 / 570	
		LOW		l/s / CFM	245 / 520	
	EXTERNAL STATIC PRESSURE (H/M/L)			Pa / in.wg.	0	
	SOUND PRESSURE LEVEL (H/M/L)			dBA	51 / 48 / 47	
	UNIT DIMENSION	HEIGHT		mm/in	218 / 8.58	
		WIDTH		mm/in	1080 / 42.52	
		DEPTH		mm/in	630 / 24.80	
	PACKING DIMENSION	HEIGHT		mm/in	297 / 11.69	
		WIDTH		mm/in	1197 / 47.13	
		DEPTH		mm/in	740 / 29.13	
	UNIT WEIGHT			kg/lb	28 / 62	
	CONDENSATE DRAIN SIZE			mm/in	19.05 / 3/4	
OUTDOOR UNIT	AIR FLOW			l/s / CFM	741 / 1570	1605 / 3400
	SOUND PRESSURE LEVEL			dBA	54	58
	UNIT DIMENSION	HEIGHT		mm/in	750 / 29.5	850 / 33.46
		WIDTH		mm/in	855 / 33.7	1030 / 40.55
		DEPTH		mm/in	328 / 12.9	400 / 15.75
	PACKING DIMENSION	HEIGHT		mm/in	810 / 31.9	1000 / 39.37
		WIDTH		mm/in	990 / 39.0	1200 / 47.24
		DEPTH		mm/in	415 / 16.3	560 / 22.05
	UNIT WEIGHT			kg/lb	68 / 149.9	95 / 209.4
	PIPE CONNECTION	TYPE			FLARE VALVE	
		SIZE	LIQUID	mm/in	9.52 / 3/8	9.52 / 3/8
			GAS	mm/in	15.88 / 5/8	15.88 / 5/8
REFRIGERANT CHARGE				kg/lb	1.80 / 3.97	1.90 / 4.19

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3) NOMINAL COOLING AND HEATING CAPACITY ARE BASED ON THE CONDITIONS BELOW :
a) COOLING - 27°C DB / 19°C WB INDOOR AND 35°C DB / 24°C WB OUTDOOR
b) HEATING - 20°C DB INDOOR AND 7°C DB / 6°C WB OUTDOOR
4) SOUND PRESSURE LEVEL ARE ACCORDING TO JIS B 8615 STANDARD. POSITION OF THE MEASUREMENT POINT IS 1m IN FRONT AND 1m BELOW THE UNIT.
5) SOUND SPECTRUM FOR A5CM 28ER IS NOT READY AT THE TIME OF PRINTING.
6) ALL SPECIFICATIONS ARE TENTATIVE SPECIFICATIONS AT THE TIME OF PRINTING. PLEASE CONSULT YOUR DEALER FOR CONFIRMATION.

Electrical Data - Cooling Only (R410A)

MODEL	INDOOR UNIT		A5CM 20E	
	OUTDOOR UNIT		A5LC 20C	A5LC 25C
INDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	101	109
	RATED RUNNING CURRENT	A	0.46	0.49
	MOTOR OUTPUT	W	50	65
	POLES		4	4
OUTDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	120	132
	RATED RUNNING CURRENT	A	0.53	0.58
	MOTOR OUTPUT	W	64	64
	POLES		6	6
COMPRESSOR	INSULATION GRADE		CLASS E	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	CAPACITOR	µF	50.0	50.0
	RATED INPUT POWER	W	1502	1732
	RATED RUNNING CURRENT	A	6.6	7.8
	LOCKED ROTOR AMP.	A	27	63

MODEL	INDOOR UNIT		A5CM 28E	
	OUTDOOR UNIT		A5LC 28C	A5LC 35C
INDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	117	
	RATED RUNNING CURRENT	A	0.52	
	MOTOR OUTPUT	W	70	
	POLES		4	
OUTDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	142	220
	RATED RUNNING CURRENT	A	0.62	1.06
	MOTOR OUTPUT	W	75	145
	POLES		6	8
COMPRESSOR	INSULATION GRADE		CLASS E	-
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	380 - 415 / 3 / 50
	CAPACITOR	µF	45.0	NIL
	RATED INPUT POWER	W	2495	2447
	RATED RUNNING CURRENT	A	11.87	4.75
	LOCKED ROTOR AMP.	A	65	7

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3) ALL SPECIFICATIONS ARE TENTATIVE SPECIFICATIONS AT THE TIME OF PRINTING. PLEASE CONSULT YOUR DEALER FOR CONFIRMATION.

Electrical Data - Heatpump (R410A)

MODEL	INDOOR UNIT		A5CM 20ER	A5CM 25ER
	OUTDOOR UNIT		A5LC 20CR	A5LC 25CR
INDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	101	109
	RATED RUNNING CURRENT	A	0.46	0.49
	MOTOR OUTPUT	W	50	65
	POLES		4	4
OUTDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	120	132
	RATED RUNNING CURRENT	A	0.53	0.58
	MOTOR OUTPUT	W	64	64
	POLES		6	6
COMPRESSOR	INSULATION GRADE		CLASS E	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	CAPACITOR	μF	50.0	50.0
	RATED INPUT POWER (COOLING)	W	1502	1732
	RATED INPUT POWER (HEATING)	W	1272	1762
	RATED RUNNING CURRENT (COOLING)	A	6.6	7.8
	RATED RUNNING CURRENT (HEATING)	A	5.6	8.0
	LOCKED ROTOR AMP.	A	27	63

MODEL	INDOOR UNIT		A5CM 28ER	
	OUTDOOR UNIT		A5LC 28CR	A5LC 35CR
INDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	117	
	RATED RUNNING CURRENT	A	0.52	
	MOTOR OUTPUT	W	70	
	POLES		4	
OUTDOOR MOTOR	INSULATION GRADE		CLASS B	
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	
	RATED INPUT POWER	W	142	220
	RATED RUNNING CURRENT	A	0.62	1.06
	MOTOR OUTPUT	W	75	145
	POLES		6	8
COMPRESSOR	INSULATION GRADE		CLASS E	-
	POWER SOURCE	V/Ph/Hz	220 - 240 / 1 / 50	380 - 415 / 3 / 50
	CAPACITOR	μF	45.0	NIL
	RATED INPUT POWER (COOLING)	W	2495	2447
	RATED INPUT POWER (HEATING)	W	2196	2297
	RATED RUNNING CURRENT (COOLING)	A	11.87	4.75
	RATED RUNNING CURRENT (HEATING)	A	10.70	4.47
	LOCKED ROTOR AMP.	A	65	7

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.
2) ALL UNITS ARE BEING TESTED AND COMPLY TO ISO 5151.
3) ALL SPECIFICATIONS ARE TENTATIVE SPECIFICATIONS AT THE TIME OF PRINTING. PLEASE CONSULT YOUR DEALER FOR CONFIRMATION.

Components Data (R410A)

MODEL	INDOOR UNIT			A5CM 20E	A5CM 25E
	OUTDOOR UNIT			A5LC 20C	A5LC 25C
INDOOR FAN	TYPE			CROSS FLOW	
	QUANTITY			2	
	MATERIAL			ABS	
	DRIVE			DIRECT	
	DIAMETER		mm/in	146 / 5.75	
	LENGTH		mm/in	200 / 7.87	
INDOOR FAN MOTOR	TYPE			INDUCTION	
	QUANTITY			1	
	INDEX OF PROTECTION (IP)			N/A	
OUTDOOR FAN	TYPE			PROPELLER	
	QUANTITY			1	
	MATERIAL			GLASS REINFORCED ACRYL STYRENE RESIN	
	DRIVE			DIRECT	
	DIAMETER		mm/in	457 / 18	
OUTDOOR FAN MOTOR	TYPE			INDUCTION	
	QUANTITY			1	
	INDEX OF PROTECTION (IP)			IP54	
COMPRESSOR	TYPE			ROTARY	
	OIL TYPE			RB68A or Freol Alpha68M	
	OIL AMOUNT		cm^3 / fl.oz.	670 / 23.6	1130 / 39.8
INDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	
		DIAMETER	mm/in	7.00 / 0.276	
		THICKNESS	mm/in	0.28 / 0.011	
	FIN	MATERIAL		ALUMINIUM (SLIT FIN)	
		THICKNESS	mm/in	0.11 / 0.0043	
		FACE AREA	m^2/ft^2	0.27 / 2.90	
		ROW		3	
		FIN PER INCH		18	
OUTDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	
		DIAMETER	mm/in	7.00 / 0.276	
		THICKNESS	mm/in	0.28 / 0.011	
	FIN	MATERIAL		ALUMINIUM (CORR. FIN)	ALUMINIUM (CORR. FIN)
		THICKNESS	mm/in	0.11 / 0.0043	0.11 / 0.0043
		FACE AREA	m^2/ft^2	0.51 / 5.46	0.62 / 6.63
		ROW		2	2
		FIN PER INCH		18	18
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER	
		QUANTITY	pc	2	
		SIZE LENGTH	mm/in	309.20 / 12.17	
		SIZE WIDTH	mm/in	383.00 / 15.08	
		SIZE THICKNESS	mm/in	2.25 / 0.09	
CASING	INDOOR UNIT		MATERIAL	PS	
			FINISHING	ETCHING SURFACE	
			COLOUR	LIGHT GREY	
	OUTDOOR UNIT		MATERIAL	GALVANISED MILD STEEL	
			FINISHING	POLYESTER POWDER	
			COLOUR	LIGHT GREY	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

Components Data (R410A)

MODEL	INDOOR UNIT			A5CM 28E	
	OUTDOOR UNIT			A5LC 28C	A5LC 35C
INDOOR FAN	TYPE			CROSS FLOW	
	QUANTITY			2	
	MATERIAL			ABS	
	DRIVE			DIRECT	
	DIAMETER		mm/in	146 / 5.75	
	LENGTH		mm/in	200 / 7.87	
INDOOR FAN MOTOR	TYPE			INDUCTION	
	QUANTITY			1	
	INDEX OF PROTECTION (IP)			N/A	
OUTDOOR FAN	TYPE			PROPELLER	
	QUANTITY			1	
	MATERIAL			GLASS REINFORCED ACRYL STYRENE RESIN	
	DRIVE			DIRECT	
	DIAMETER		mm/in	457 / 18	609.6 / 24
OUTDOOR FAN MOTOR	TYPE			INDUCTION	
	QUANTITY			1	
	INDEX OF PROTECTION (IP)			IP54	N/A
COMPRESSOR	TYPE			ROTARY	SCROLL
	OIL TYPE			RB68A or Freol Alpha68M	MOBIL EAL ARCTIC 22CC
	OIL AMOUNT		cm^3 / fl.oz.	1130 / 39.8	1242 / 43.7
INDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	
		DIAMETER	mm/in	7.00 / 0.276	
		THICKNESS	mm/in	0.28 / 0.011	
	FIN	MATERIAL		ALUMINIUM (SLIT FIN)	
		THICKNESS	mm/in	0.11 / 0.0043	
		FACE AREA	m^2/ft^2	0.27 / 2.90	
		ROW		3	
		FIN PER INCH		18	
OUTDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	SEAMLESS COPPER
		DIAMETER	mm/in	7.00 / 0.276	7.00 / 0.276
		THICKNESS	mm/in	0.28 / 0.011	0.28 / 0.011
	FIN	MATERIAL		ALUMINIUM (CORR. FIN)	ALUMINIUM (CORR. FIN)
		THICKNESS	mm/in	0.11 / 0.0043	0.11 / 0.0043
		FACE AREA	m^2/ft^2	0.62 / 6.63	0.87 / 9.33
		ROW		2	2
		FIN PER INCH		18	18
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER	
		QUANTITY	pc	2	
		SIZE LENGTH	mm/in	309.20 / 12.17	
		SIZE WIDTH	mm/in	383.00 / 15.08	
		SIZE THICKNESS	mm/in	2.25 / 0.09	
CASING	INDOOR UNIT		MATERIAL	PS	
			FINISHING	ETCHING SURFACE	
			COLOUR	LIGHT GREY	
	OUTDOOR UNIT		MATERIAL	GALVANISED MILD STEEL	
			FINISHING	POLYESTER POWDER	
			COLOUR	LIGHT GREY	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

Components Data (R410A)

MODEL	INDOOR UNIT			A5CM 20ER	A5CM 25ER
	OUTDOOR UNIT			A5LC 20CR	A5LC 25CR
INDOOR FAN	TYPE			CROSS FLOW	
	QUANTITY			2	
	MATERIAL			ABS	
	DRIVE			DIRECT	
	DIAMETER		mm/in	146 / 5.75	
	LENGTH		mm/in	200 / 7.87	
INDOOR FAN MOTOR	TYPE			INDUCTION	
	QUANTITY			1	
	INDEX OF PROTECTION (IP)			N/A	
OUTDOOR FAN	TYPE			PROPELLER	
	QUANTITY			1	
	MATERIAL			GLASS REINFORCED ACRYL SYRENE RESIN	
	DRIVE			DIRECT	
	DIAMETER		mm/in	457 / 18	
OUTDOOR FAN MOTOR	TYPE			INDUCTION	
	QUANTITY			1	
	INDEX OF PROTECTION (IP)			IP54	
COMPRESSOR	TYPE			ROTARY	
	OIL TYPE			RB68A or Freol Alpha68M	
	OIL AMOUNT		cm^3 / fl.oz.	670 / 23.6	1130 / 39.8
INDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	
		DIAMETER	mm/in	7.00 / 0.276	
		THICKNESS	mm/in	0.28 / 0.011	
	FIN	MATERIAL		ALUMINIUM (SLIT FIN)	
		THICKNESS	mm/in	0.11 / 0.0043	
		FACE AREA	m^2/ft^2	0.27 / 2.90	
		ROW		3	
		FIN PER INCH		18	
OUTDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	
		DIAMETER	mm/in	7.00 / 0.276	
		THICKNESS	mm/in	0.28 / 0.011	
	FIN	MATERIAL		ALUMINIUM (CORR. FIN)	ALUMINIUM (CORR. FIN)
		THICKNESS	mm/in	0.11 / 0.0043	0.11 / 0.0043
		FACE AREA	m^2/ft^2	0.51 / 5.46	0.62 / 6.63
		ROW		2	2
		FIN PER INCH		18	18
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER	
		QUANTITY	pc	2	
		SIZE LENGTH	mm/in	309.20 / 12.17	
		SIZE WIDTH	mm/in	383.00 / 15.08	
		SIZE THICKNESS	mm/in	2.25 / 0.09	
CASING	INDOOR UNIT		MATERIAL	PS	
			FINISHING	ETCHING SURFACE	
			COLOUR	LIGHT GREY	
	OUTDOOR UNIT		MATERIAL	GALVANISED MILD STEEL	
			FINISHING	POLYESTER POWDER	
			COLOUR	LIGHT GREY	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

Components Data (R410A)

MODEL	INDOOR UNIT			A5CM 28ER	
	OUTDOOR UNIT			A5LC 28CR	A5LC 35CR
INDOOR FAN	TYPE			CROSS FLOW	
	Q'TY			2	
	MATERIAL			ABS	
	DRIVE			DIRECT	
	DIAMETER		mm/in	146 / 5.75	
	LENGTH		mm/in	200 / 7.87	
INDOOR FAN MOTOR	TYPE			INDUCTION	
	Q'TY			1	
	INDEX OF PROTECTION (IP)			N/A	
OUTDOOR FAN	TYPE			PROPELLER	
	Q'TY			1	
	MATERIAL			GLASS REINFORCED ACRYL STYRENE RESIN	
	DRIVE			DIRECT	
	DIAMETER		mm/in	457 / 18	609.6 / 24
OUTDOOR FAN MOTOR	TYPE			INDUCTION	
	Q'TY			1	
	INDEX OF PROTECTION (IP)			IP54	-
COMPRESSOR	TYPE			ROTARY	SCROLL
	OIL TYPE			RB68A or Freol Alpha68M	MOBIL EAL ARCTIC 22CC
	OIL AMOUNT		cm^3 / fl.oz.	1130 / 39.8	1242 / 43.7
INDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	
		DIAMETER	mm/in	7.00 / 0.276	
		THICKNESS	mm/in	0.28 / 0.011	
	FIN	MATERIAL		ALUMINIUM (SLIT FIN)	
		THICKNESS	mm/in	0.11 / 0.0043	
		FACE AREA	m^2/ft^2	0.27 / 2.90	
		ROW		3	
		FIN PER INCH		18	
OUTDOOR COIL	TUBE	MATERIAL		SEAMLESS INNER GROOVE COPPER	SEAMLESS COPPER
		DIAMETER	mm/in	7.00 / 0.276	7.00 / 0.276
		THICKNESS	mm/in	0.28 / 0.011	0.28 / 0.011
	FIN	MATERIAL		ALUMINIUM (CORR. FIN)	ALUMINIUM (CORR. FIN)
		THICKNESS	mm/in	0.11 / 0.0043	0.11 / 0.0043
		FACE AREA	m^2/ft^2	0.62 / 6.63	0.87 / 9.33
		ROW		2	2
		FIN PER INCH		18	18
AIR QUALITY	FILTER	TYPE		WASHABLE SARANET FILTER	
		QUANTITY	pc	2	
		SIZE LENGTH	mm/in	309.20 / 12.17	
		SIZE WIDTH	mm/in	383.00 / 15.08	
		SIZE THICKNESS	mm/in	2.25 / 0.09	
CASING	INDOOR UNIT		MATERIAL	PS	
			FINISHING	ETCHING SURFACE	
			COLOUR	LIGHT GREY	
	OUTDOOR UNIT		MATERIAL	GALVANISED MILD STEEL	
			FINISHING	POLYESTER POWDER	
			COLOUR	LIGHT GREY	

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

Safety Devices

MODEL	INDOOR UNIT			A5CM 20E	A5CM 25E
	OUTDOOR UNIT			A5LC 20C	A5LC 25C
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa / psi	N/A	
		CLOSE	kPa / psi	N/A	
	LOW PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa / psi	N/A	
		CLOSE	kPa / psi	N/A	
	PHASE SEQUENCER			N/A	
	DISCHARGE THERMOSTAT SETTING		°C / °F	N/A	

MODEL	INDOOR UNIT			A5CM 28E	
	OUTDOOR UNIT			A5LC 28C	A5LC 35C
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		N/A	NC
		OPEN	kPa / psi	N/A	4137 / 600
		CLOSE	kPa / psi	N/A	3310 / 480
	LOW PRESSURE SWITCH	TYPE		N/A	NC
		OPEN	kPa / psi	N/A	48 / 7
		CLOSE	kPa / psi	N/A	152 / 22
	PHASE SEQUENCER			N/A	YES
	DISCHARGE THERMOSTAT SETTING		°C / °F	N/A	130 / 266

MODEL	INDOOR UNIT			A5CM 20ER	A5CM 25ER
	OUTDOOR UNIT			A5LC 20CR	A5LC 25CR
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa / psi	N/A	
		CLOSE	kPa / psi	N/A	
	LOW PRESSURE SWITCH	TYPE		N/A	
		OPEN	kPa / psi	N/A	
		CLOSE	kPa / psi	N/A	
	PHASE SEQUENCER			N/A	
	DISCHARGE THERMOSTAT SETTING		°C / °F	N/A	

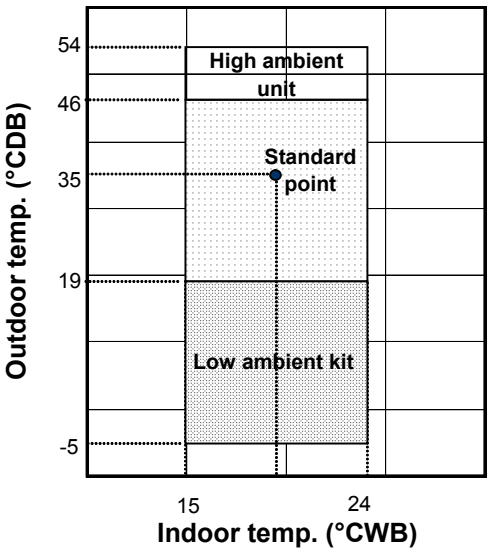
MODEL	INDOOR UNIT			A5CM 28ER	
	OUTDOOR UNIT			A5LC 28CR	A5LC 35CR
SAFETY DEVICE	HIGH PRESSURE SWITCH	TYPE		N/A	NC
		OPEN	kPa / psi	N/A	4137 / 600
		CLOSE	kPa / psi	N/A	3310 / 480
	LOW PRESSURE SWITCH	TYPE		N/A	NC
		OPEN	kPa / psi	N/A	48 / 7
		CLOSE	kPa / psi	N/A	152 / 22
	PHASE SEQUENCER			N/A	YES
	DISCHARGE THERMOSTAT SETTING		°C / °F	N/A	130 / 266

1) ALL SPECIFICATIONS ARE SUBJECTED TO CHANGE BY THE MANUFACTURER WITHOUT PRIOR NOTICE.

5. OPERATING RANGE

Ensure the operating temperature is in allowable range.

Cooling only

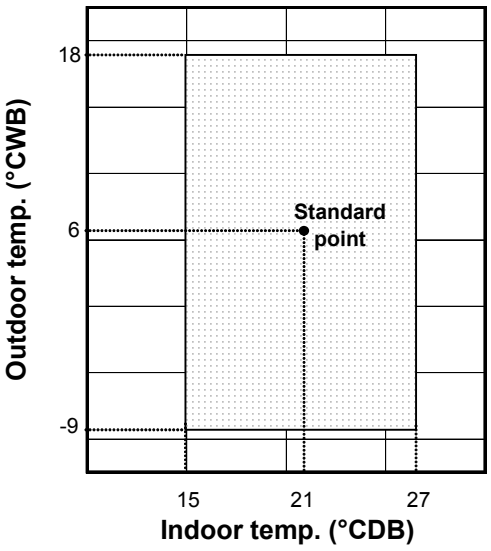


Caution :

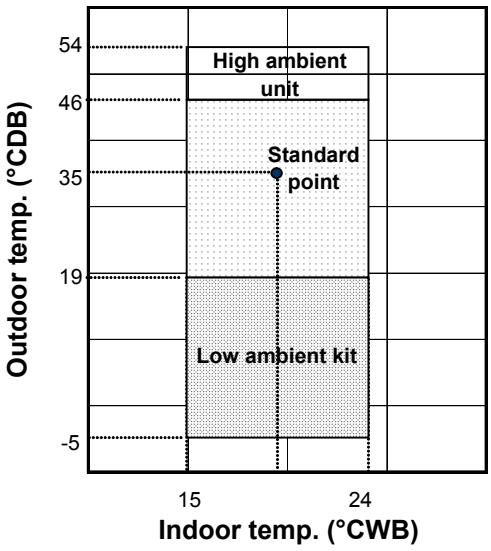
The use of your air conditioner outside the range of working temperature and humidity can result in serious failure.

Heatpump

Heating



Cooling



Note :

Standard operating range.

With High ambient unit. (Optional item)
Please refer to local dealer for unit of this specification.

With Low ambient kit. (Optional item)
Please refer to local dealer for unit of this specification.

6. PERFORMANCE TABLE

Interpolation and *Extrapolation* method can be used to get the total capacity, TC and sensible capacity, SC at those temperatures which are not stated out in the table.

Example:

Model: ACM 20E - ALC 20C
Indoor Condition: 23°C DB, 15°C WB
Outdoor Condition: 37°C DB

Solution:

Overall

Based on the Performance table on Pg. 37,

1. Refer to the Indoor DB column,
   - **23°C** is located between 20°C and 24°C (Thus, Interpolation need to be applied)

2. Refer to the Indoor WB column,
   - **15°C** only available in the case of Indoor DB = 20°C. (Thus, Extrapolation between 16°C WB and 17°C WB during 24°C indoor DB is required)

3. Refer to the Outdoor DB column,
   - **37°C** is located between 35°C and 40°C. (Thus, Interpolation need to be applied)

Please follow the steps below in order to get the required capacity.

1st Step
Extrapolation of Indoor WB

Find TC, SC for
(a) Indoor: 24°C DB, 15°C WB
Outdoor: 35°C DB

(b) Indoor: 24°C DB, 15°C WB
Outdoor: 40°C DB

→

2nd Step
Interpolation of Indoor DB

Find TC, SC for
(a) Indoor: 23°C DB, 15°C WB
Outdoor: 35°C DB

(b) Indoor: 23°C DB, 15°C WB
Outdoor: 40°C DB

→

3rd Step
Interpolation of Outdoor DB

Find TC, SC for
(a) Indoor: 23°C DB, 15°C WB
Outdoor: 37°C DB

Details:

1st Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 24°C DB, 15°C WB

Outdoor Condition: 35°C DB

Indoor DB ° C	Indoor WB ° C	Outdoor DB ° C			
			35		
			TC (kW)	SC (kW)	
24	15		x_1	y_1	
	16		5.211	3.749	
	17		5.350	3.510	

Total capacity, TC

$\Rightarrow$ x_1 = 5.071kW *(Same as Total capacity at 20°C Indoor DB / 15°C Indoor WB & 35°C Outdoor WB)**

Sensible capacity, SC

Extrapolation Method:

$$\Rightarrow \frac{17°C - 15°C}{17°C - 16°C} = \frac{3.510kW - y_1}{3.510kW - 3.749kW}$$

$\Rightarrow$ y_1 = 3.988kW

(b) Indoor Condition: 24°C DB, 15°C WB

Outdoor Condition: 40°C DB

Indoor DB ° C	Indoor WB ° C	Outdoor DB ° C			
			40		
			TC (kW)	SC (kW)	
24	15		x_2	y_2	
	16		4.807	3.430	
	17		4.946	3.231	

Total capacity, TC

$\Rightarrow$ x_2 = 4.669kW *(Same as Total capacity at 20°C Indoor DB / 15°C Indoor WB & 40°C Outdoor WB)**

Sensible capacity, SC

Extrapolation Method:

$$\Rightarrow \frac{17°C - 15°C}{17°C - 16°C} = \frac{3.231kW - y_2}{3.231kW - 3.430kW}$$

$\Rightarrow$ y_2 = 3.629kW

***** *This is due to 2 different conditions with same WB temperature, will have the same level of enthalpy. For more details, please refer to psychrometrics chart*

2nd Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 23°C DB, 15°C WB
Outdoor Condition: 35°C DB

Indoor DB ° C	Indoor WB ° C	Outdoor DB ° C			
			35		
			TC (kW)	SC (kW)	
20	**15**		5.071	2.984	
23	**15**		x_3	y_3	
24	**15**		5.071	3.988	

Total capacity, TC

$\Rightarrow$ x_3 = 5.071kW *(Same as Total capacity at 20°C Indoor DB / 15°C Indoor WB & 35°C Outdoor WB)**

Sensible capacity, SC

Interpolation Method:

$$\Rightarrow \frac{24°C - 20°C}{24°C - 23°C} = \frac{3.988kW - 2.984kW}{3.988kW - y_3}$$

$\Rightarrow$ y_3 = 3.737kW

(b) Indoor Condition: 23°C DB, 15°C WB

Outdoor Condition: 40°C DB

Indoor DB ° C	Indoor WB ° C	Outdoor DB ° C			
			40		
			TC (kW)	SC (kW)	
20	**15**		4.669	2.626	
23	**15**		x_4	y_4	
24	**15**		4.669	3.629	

Total capacity, TC

$\Rightarrow$ x_4 = 4.669kW *(Same as Total capacity at 20°C Indoor DB / 15°C Indoor WB & 40°C Outdoor WB)**

Sensible capacity, SC

Interpolation Method:

$$\Rightarrow \frac{24°C - 20°C}{24°C - 23°C} = \frac{3.629kW - 2.626kW}{3.629kW - y_4}$$

$\Rightarrow$ y_4 = 3.378kW

***** *This is due to 2 different conditions with same WB temperature will have the same level of enthalpy. For more details, please refer to psychrometrics chart*

3rd Step:

To obtain the Total capacity and Sensible capacity for

(a) Indoor Condition: 23°C DB, 15°C WB

Outdoor Condition: 37°C DB

Indoor DB ° C	Indoor WB ° C	Outdoor DB ° C						
			35		37		40	
			TC (kW)	SC (kW)	TC (kW)	SC (kW)	TC (kW)	SC (kW)
24	**15**		5.071	3.737	**x**	**y**	4.669	3.378

Total capacity, TC

Interpolation Method:

♥ $\frac{40°C - 35°C}{40°C - 37°C} = \frac{4.669kW - 5.071kW}{4.669kW - x}$

♥ #x = 4.910kW

Sensible capacity, SC

Interpolation Method:

♥ $\frac{40°C - 35°C}{40°C - 37°C} = \frac{3.378kW - 3.737kW}{3.424kW - y}$

♥ #y = 3.593kW

R410A MODELS
(COOLING ONLY)

MODEL : A5CM 20E / A5LC 20C

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	5.715	3.788	5.176	3.247	4.622	2.692	4.068	2.137	3.514	1.581	2.849	0.915
	16	5.842	3.492	5.340	2.990	4.830	2.481	4.320	1.971	3.811	1.462	3.199	0.850
24	16	5.842	4.601	5.340	4.099	4.830	3.590	4.320	3.080	3.811	2.570	3.199	1.959
	17	5.968	4.306	5.503	3.842	5.038	3.378	4.573	2.914	4.107	2.451	3.549	1.894
	18	6.102	4.017	5.678	3.596	5.255	3.176	4.831	2.755	4.408	2.334	3.899	1.829
	19	6.238	3.737	5.868	3.403	5.498	3.068	5.128	2.733	4.729	2.293	4.249	1.764
	20	6.360	3.431	5.971	3.051	5.582	2.671	5.194	2.290	4.805	1.910	4.339	1.454
28	18	6.102	5.126	5.678	4.705	5.255	4.285	4.831	3.864	4.408	3.443	3.899	2.938
	19	6.238	4.846	5.868	4.512	5.498	4.177	5.128	3.842	4.729	3.402	4.249	2.873
	20	6.360	4.540	5.971	4.160	5.582	3.780	5.194	3.399	4.805	3.019	4.339	2.563
	21	6.484	4.243	6.088	3.860	5.693	3.477	5.298	3.094	4.902	2.712	4.428	2.252
	22	6.608	3.945	6.206	3.560	5.804	3.175	5.402	2.789	4.999	2.404	4.517	1.942
	23	6.732	3.648	6.323	3.260	5.914	2.872	5.505	2.484	5.097	2.097	4.606	1.631
	24	6.856	3.350	6.440	2.960	6.025	2.570	5.609	2.180	5.194	1.789	4.695	1.321
30	20	6.360	5.095	5.971	4.714	5.582	4.334	5.194	3.954	4.805	3.574	4.339	3.117
	21	6.484	4.797	6.088	4.414	5.693	4.032	5.298	3.649	4.902	3.266	4.428	2.807
	22	6.608	4.500	6.206	4.115	5.804	3.729	5.402	3.344	4.999	2.959	4.517	2.496
	23	6.732	4.202	6.323	3.815	5.914	3.427	5.505	3.039	5.097	2.651	4.606	2.186
	24	6.856	3.905	6.440	3.515	6.025	3.124	5.609	2.734	5.194	2.344	4.695	1.875

MODEL : A5CM 25E / A5LC 25C

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	5.924	4.060	5.602	3.715	5.279	3.405	4.956	3.096	4.633	2.787	4.246	2.416
	16	6.138	3.823	5.810	3.519	5.481	3.233	5.153	2.947	4.824	2.662	4.430	2.319
24	16	6.138	4.870	5.810	4.566	5.481	4.281	5.153	3.995	4.824	3.710	4.430	3.367
	17	6.352	4.633	6.018	4.371	5.684	4.109	5.349	3.847	5.015	3.585	4.614	3.270
	18	6.567	4.378	6.227	4.146	5.886	3.915	5.546	3.683	5.206	3.452	4.798	3.174
	19	6.789	4.112	6.479	3.854	6.170	3.595	5.860	3.337	5.461	3.219	4.981	3.077
	20	6.993	3.855	6.626	3.616	6.260	3.378	5.893	3.140	5.526	2.901	5.086	2.615
28	18	6.567	5.426	6.227	5.194	5.886	4.963	5.546	4.731	5.206	4.499	4.798	4.221
	19	6.789	5.160	6.479	4.901	6.170	4.643	5.860	4.385	5.461	4.267	4.981	4.125
	20	6.993	4.903	6.626	4.664	6.260	4.426	5.893	4.187	5.526	3.949	5.086	3.663
	21	7.205	4.634	6.817	4.359	6.430	4.083	6.043	3.807	5.655	3.532	5.191	3.201
	22	7.416	4.366	7.008	4.053	6.600	3.740	6.193	3.427	5.785	3.114	5.295	2.739
	23	7.628	4.098	7.199	3.748	6.771	3.397	6.342	3.047	5.914	2.697	5.400	2.277
	24	7.839	3.829	7.390	3.442	6.941	3.055	6.492	2.667	6.043	2.280	5.504	1.815
30	20	6.993	5.427	6.626	5.188	6.260	4.950	5.893	4.711	5.526	4.473	5.086	4.187
	21	7.205	5.158	6.817	4.883	6.430	4.607	6.043	4.331	5.655	4.056	5.191	3.725
	22	7.416	4.890	7.008	4.577	6.600	4.264	6.193	3.951	5.785	3.638	5.295	3.263
	23	7.628	4.622	7.199	4.271	6.771	3.921	6.342	3.571	5.914	3.221	5.400	2.801
	24	7.839	4.353	7.390	3.966	6.941	3.578	6.492	3.191	6.043	2.804	5.504	2.339

R410A MODELS
(COOLING ONLY)

MODEL : A5CM 28E / A5LC 28C

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	8.088	5.364	7.605	4.869	7.036	4.410	6.468	3.951	5.899	3.492	5.217	2.942
	16	8.340	5.050	7.847	4.607	7.311	4.182	6.776	3.758	6.241	3.333	5.598	2.823
24	16	8.340	6.350	7.847	5.907	7.311	5.483	6.776	5.058	6.241	4.633	5.598	4.123
	17	8.591	6.036	8.089	5.645	7.587	5.255	7.084	4.864	6.582	4.473	5.979	4.005
	18	8.883	5.706	8.398	5.356	7.912	5.006	7.427	4.656	6.942	4.306	6.360	3.886
	19	9.183	5.370	8.760	5.034	8.336	4.698	7.913	4.362	7.380	4.092	6.741	3.768
	20	9.456	5.028	8.961	4.676	8.466	4.325	7.971	3.974	7.476	3.622	6.882	3.200
28	18	8.883	7.006	8.398	6.656	7.912	6.306	7.427	5.956	6.942	5.606	6.360	5.186
	19	9.183	6.670	8.760	6.334	8.336	5.998	7.913	5.663	7.380	5.392	6.741	5.068
	20	9.456	6.328	8.961	5.977	8.466	5.625	7.971	5.274	7.476	4.922	6.882	4.500
	21	9.739	5.981	9.217	5.587	8.695	5.193	8.173	4.800	7.651	4.406	7.024	3.933
	22	10.021	5.634	9.472	5.198	8.923	4.761	8.374	4.325	7.825	3.889	7.166	3.366
	23	10.304	5.286	9.727	4.808	9.151	4.330	8.575	3.851	7.999	3.373	7.307	2.799
	24	10.586	4.939	9.983	4.419	9.379	3.898	8.776	3.377	8.173	2.856	7.449	2.232
30	20	9.456	6.978	8.961	6.627	8.466	6.275	7.971	5.924	7.476	5.572	6.882	5.151
	21	9.739	6.631	9.217	6.237	8.695	5.843	8.173	5.450	7.651	5.056	7.024	4.583
	22	10.021	6.284	9.472	5.848	8.923	5.412	8.374	4.975	7.825	4.539	7.166	4.016
	23	10.304	5.936	9.727	5.458	9.151	4.980	8.575	4.501	7.999	4.023	7.307	3.449
	24	10.586	5.589	9.983	5.069	9.379	4.548	8.776	4.027	8.173	3.506	7.449	2.882

MODEL : A5CM 28E / A5LC 35C

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	8.685	5.968	8.330	5.594	7.924	5.300	7.519	5.005	7.113	4.711	6.626	4.357
	16	8.967	5.676	8.571	5.361	8.150	5.086	7.729	4.811	7.308	4.537	6.803	4.207
24	16	8.967	6.976	8.571	6.661	8.150	6.387	7.729	6.112	7.308	5.837	6.803	5.507
	17	9.249	6.684	8.813	6.429	8.377	6.173	7.940	5.918	7.504	5.662	6.980	5.356
	18	9.555	6.356	9.094	6.134	8.633	5.913	8.172	5.692	7.711	5.471	7.157	5.205
	19	9.867	6.004	9.414	5.700	8.961	5.397	8.508	5.093	7.975	5.075	7.334	5.055
	20	10.166	5.678	9.651	5.419	9.136	5.161	8.621	4.902	8.106	4.644	7.488	4.333
28	18	9.555	7.656	9.094	7.435	8.633	7.213	8.172	6.992	7.711	6.771	7.157	6.505
	19	9.867	7.304	9.414	7.000	8.961	6.697	8.508	6.393	7.975	6.376	7.334	6.355
	20	10.166	6.978	9.651	6.719	9.136	6.461	8.621	6.202	8.106	5.944	7.488	5.634
	21	10.470	6.629	9.927	6.299	9.383	5.969	8.839	5.638	8.295	5.308	7.642	4.912
	22	10.775	6.279	10.202	5.878	9.630	5.476	9.057	5.075	8.484	4.673	7.796	4.191
	23	11.080	5.930	10.478	5.457	9.876	4.984	9.275	4.511	8.673	4.038	7.950	3.470
	24	11.385	5.580	10.754	5.036	10.123	4.491	9.492	3.947	8.862	3.402	8.105	2.749
30	20	10.166	7.628	9.651	7.370	9.136	7.111	8.621	6.852	8.106	6.594	7.488	6.284
	21	10.470	7.279	9.927	6.949	9.383	6.619	8.839	6.289	8.295	5.958	7.642	5.562
	22	10.775	6.929	10.202	6.528	9.630	6.126	9.057	5.725	8.484	5.323	7.796	4.841
	23	11.080	6.580	10.478	6.107	9.876	5.634	9.275	5.161	8.673	4.688	7.950	4.120
	24	11.385	6.230	10.754	5.686	10.123	5.141	9.492	4.597	8.862	4.052	8.105	3.399

R410A MODELS
(HEATPUMP)

MODEL : A5CM 20ER / A5LC 20CR

COOLING MODE

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	5.715	3.788	5.176	3.247	4.622	2.692	4.068	2.137	3.514	1.581	2.849	0.915
	16	5.842	3.492	5.340	2.990	4.830	2.481	4.320	1.971	3.811	1.462	3.199	0.850
24	16	5.842	4.601	5.340	4.099	4.830	3.590	4.320	3.080	3.811	2.570	3.199	1.959
	17	5.968	4.306	5.503	3.842	5.038	3.378	4.573	2.914	4.107	2.451	3.549	1.894
	18	6.102	4.017	5.678	3.596	5.255	3.176	4.831	2.755	4.408	2.334	3.899	1.829
	19	6.238	3.737	5.868	3.403	5.498	3.068	5.128	2.733	4.729	2.293	4.249	1.764
	20	6.360	3.431	5.971	3.051	5.582	2.671	5.194	2.290	4.805	1.910	4.339	1.454
28	18	6.102	5.126	5.678	4.705	5.255	4.285	4.831	3.864	4.408	3.443	3.899	2.938
	19	6.238	4.846	5.868	4.512	5.498	4.177	5.128	3.842	4.729	3.402	4.249	2.873
	20	6.360	4.540	5.971	4.160	5.582	3.780	5.194	3.399	4.805	3.019	4.339	2.563
	21	6.484	4.243	6.088	3.860	5.693	3.477	5.298	3.094	4.902	2.712	4.428	2.252
	22	6.608	3.945	6.206	3.560	5.804	3.175	5.402	2.789	4.999	2.404	4.517	1.942
	23	6.732	3.648	6.323	3.260	5.914	2.872	5.505	2.484	5.097	2.097	4.606	1.631
	24	6.856	3.350	6.440	2.960	6.025	2.570	5.609	2.180	5.194	1.789	4.695	1.321
30	20	6.360	5.095	5.971	4.714	5.582	4.334	5.194	3.954	4.805	3.574	4.339	3.117
	21	6.484	4.797	6.088	4.414	5.693	4.032	5.298	3.649	4.902	3.266	4.428	2.807
	22	6.608	4.500	6.206	4.115	5.804	3.729	5.402	3.344	4.999	2.959	4.517	2.496
	23	6.732	4.202	6.323	3.815	5.914	3.427	5.505	3.039	5.097	2.651	4.606	2.186
	24	6.856	3.905	6.440	3.515	6.025	3.124	5.609	2.734	5.194	2.344	4.695	1.875

HEATING MODE

ID DB°C	Outdoor WB°C												
	-9		-6		-5		6		12		15		18	
	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
15	3.278	3.278	3.710	3.710	3.854	3.854	5.438	5.438	6.302	6.302	6.735	6.735	7.167	7.167
17	3.192	3.192	3.680	3.680	3.770	3.770	5.432	5.432	6.228	6.228	6.662	6.662	7.096	7.096
19	3.106	3.106	3.649	3.649	3.686	3.686	5.425	5.425	6.154	6.154	6.589	6.589	7.025	7.025
21	3.020	3.020	3.573	3.573	3.603	3.603	5.358	5.358	6.080	6.080	6.517	6.517	6.954	6.954
23	2.934	2.934	3.450	3.450	3.519	3.519	5.229	5.229	6.005	6.005	6.444	6.444	6.883	6.883
25	2.848	2.848	3.327	3.327	3.435	3.435	5.101	5.101	5.931	5.931	6.371	6.371	6.812	6.812
27	2.762	2.762	3.204	3.204	3.352	3.352	4.973	4.973	5.857	5.857	6.299	6.299	6.741	6.741
	FROST REGION													

R410A MODELS
(HEATPUMP)

MODEL : A5CM 25ER / A5LC 25CR

COOLING MODE

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	5.924	4.060	5.602	3.715	5.279	3.405	4.956	3.096	4.633	2.787	4.246	2.416
	16	6.138	3.823	5.810	3.519	5.481	3.233	5.153	2.947	4.824	2.662	4.430	2.319
24	16	6.138	4.870	5.810	4.566	5.481	4.281	5.153	3.995	4.824	3.710	4.430	3.367
	17	6.352	4.633	6.018	4.371	5.684	4.109	5.349	3.847	5.015	3.585	4.614	3.270
	18	6.567	4.378	6.227	4.146	5.886	3.915	5.546	3.683	5.206	3.452	4.798	3.174
	19	6.789	4.112	6.479	3.854	6.170	3.595	5.860	3.337	5.461	3.219	4.981	3.077
	20	6.993	3.855	6.626	3.616	6.260	3.378	5.893	3.140	5.526	2.901	5.086	2.615
28	18	6.567	5.426	6.227	5.194	5.886	4.963	5.546	4.731	5.206	4.499	4.798	4.221
	19	6.789	5.160	6.479	4.901	6.170	4.643	5.860	4.385	5.461	4.267	4.981	4.125
	20	6.993	4.903	6.626	4.664	6.260	4.426	5.893	4.187	5.526	3.949	5.086	3.663
	21	7.205	4.634	6.817	4.359	6.430	4.083	6.043	3.807	5.655	3.532	5.191	3.201
	22	7.416	4.366	7.008	4.053	6.600	3.740	6.193	3.427	5.785	3.114	5.295	2.739
	23	7.628	4.098	7.199	3.748	6.771	3.397	6.342	3.047	5.914	2.697	5.400	2.277
	24	7.839	3.829	7.390	3.442	6.941	3.055	6.492	2.667	6.043	2.280	5.504	1.815
30	20	6.993	5.427	6.626	5.188	6.260	4.950	5.893	4.711	5.526	4.473	5.086	4.187
	21	7.205	5.158	6.817	4.883	6.430	4.607	6.043	4.331	5.655	4.056	5.191	3.725
	22	7.416	4.890	7.008	4.577	6.600	4.264	6.193	3.951	5.785	3.638	5.295	3.263
	23	7.628	4.622	7.199	4.271	6.771	3.921	6.342	3.571	5.914	3.221	5.400	2.801
	24	7.839	4.353	7.390	3.966	6.941	3.578	6.492	3.191	6.043	2.804	5.504	2.339

HEATING MODE

ID DB°C	Outdoor WB°C												
	-9		-6		-5		6		12		15		18	
	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
15	3.898	3.898	4.412	4.412	4.583	4.583	6.467	6.467	7.495	7.495	8.009	8.009	8.523	8.523
17	3.796	3.796	4.347	4.347	4.488	4.488	6.459	6.459	7.431	7.431	7.950	7.950	8.470	8.470
19	3.694	3.694	4.282	4.282	4.393	4.393	6.452	6.452	7.367	7.367	7.892	7.892	8.417	8.417
21	3.591	3.591	4.190	4.190	4.298	4.298	6.387	6.387	7.304	7.304	7.834	7.834	8.364	8.364
23	3.489	3.489	4.071	4.071	4.204	4.204	6.264	6.264	7.240	7.240	7.776	7.776	8.312	8.312
25	3.387	3.387	3.951	3.951	4.109	4.109	6.142	6.142	7.176	7.176	7.718	7.718	8.259	8.259
27	3.285	3.285	3.832	3.832	4.014	4.014	6.019	6.019	7.113	7.113	7.659	7.659	8.206	8.206
	FROST REGION													

R410A MODELS
(HEATPUMP)

MODEL : A5CM 28ER / A5LC 28CR
COOLING MODE

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	8.088	5.364	7.605	4.869	7.036	4.410	6.468	3.951	5.899	3.492	5.217	2.942
	16	8.340	5.050	7.847	4.607	7.311	4.182	6.776	3.758	6.241	3.333	5.598	2.823
24	16	8.340	6.350	7.847	5.907	7.311	5.483	6.776	5.058	6.241	4.633	5.598	4.123
	17	8.591	6.036	8.089	5.645	7.587	5.255	7.084	4.864	6.582	4.473	5.979	4.005
	18	8.883	5.706	8.398	5.356	7.912	5.006	7.427	4.656	6.942	4.306	6.360	3.886
	19	9.183	5.370	8.760	5.034	8.336	4.698	7.913	4.362	7.380	4.092	6.741	3.768
	20	9.456	5.028	8.961	4.676	8.466	4.325	7.971	3.974	7.476	3.622	6.882	3.200
28	18	8.883	7.006	8.398	6.656	7.912	6.306	7.427	5.956	6.942	5.606	6.360	5.186
	19	9.183	6.670	8.760	6.334	8.336	5.998	7.913	5.663	7.380	5.392	6.741	5.068
	20	9.456	6.328	8.961	5.977	8.466	5.625	7.971	5.274	7.476	4.922	6.882	4.500
	21	9.739	5.981	9.217	5.587	8.695	5.193	8.173	4.800	7.651	4.406	7.024	3.933
	22	10.021	5.634	9.472	5.198	8.923	4.761	8.374	4.325	7.825	3.889	7.166	3.366
	23	10.304	5.286	9.727	4.808	9.151	4.330	8.575	3.851	7.999	3.373	7.307	2.799
	24	10.586	4.939	9.983	4.419	9.379	3.898	8.776	3.377	8.173	2.856	7.449	2.232
30	20	9.456	6.978	8.961	6.627	8.466	6.275	7.971	5.924	7.476	5.572	6.882	5.151
	21	9.739	6.631	9.217	6.237	8.695	5.843	8.173	5.450	7.651	5.056	7.024	4.583
	22	10.021	6.284	9.472	5.848	8.923	5.412	8.374	4.975	7.825	4.539	7.166	4.016
	23	10.304	5.936	9.727	5.458	9.151	4.980	8.575	4.501	7.999	4.023	7.307	3.449
	24	10.586	5.589	9.983	5.069	9.379	4.548	8.776	4.027	8.173	3.506	7.449	2.882

HEATING MODE

ID DB°C	Outdoor WB°C												
	-9		-6		-5		6		12		15		18	
	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
15	4.872	4.872	5.515	5.515	5.729	5.729	8.084	8.084	9.369	9.369	10.011	10.011	10.653	10.653
17	4.745	4.745	5.419	5.419	5.603	5.603	8.074	8.074	9.251	9.251	9.895	9.895	10.538	10.538
19	4.617	4.617	5.323	5.323	5.477	5.477	8.065	8.065	9.133	9.133	9.779	9.779	10.424	10.424
21	4.489	4.489	5.201	5.201	5.351	5.351	7.960	7.960	9.016	9.016	9.662	9.662	10.309	10.309
23	4.361	4.361	5.053	5.053	5.226	5.226	7.760	7.760	8.898	8.898	9.546	9.546	10.194	10.194
25	4.234	4.234	4.905	4.905	5.100	5.100	7.561	7.561	8.780	8.780	9.430	9.430	10.080	10.080
27	4.106	4.106	4.757	4.757	4.974	4.974	7.361	7.361	8.663	8.663	9.314	9.314	9.965	9.965
	FROST REGION													

R410A MODELS
(HEATPUMP)

MODEL : A5CM 28ER / A5LC 35CR

COOLING MODE

ID DB°C	ID WB°C	Outdoor DB°C											
		20		25		30		35		40		46	
		TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
20	15	8.685	5.968	8.330	5.594	7.924	5.300	7.519	5.005	7.113	4.711	6.626	4.357
	16	8.967	5.676	8.571	5.361	8.150	5.086	7.729	4.811	7.308	4.537	6.803	4.207
24	16	8.967	6.976	8.571	6.661	8.150	6.387	7.729	6.112	7.308	5.837	6.803	5.507
	17	9.249	6.684	8.813	6.429	8.377	6.173	7.940	5.918	7.504	5.662	6.980	5.356
	18	9.555	6.356	9.094	6.134	8.633	5.913	8.172	5.692	7.711	5.471	7.157	5.205
	19	9.867	6.004	9.414	5.700	8.961	5.397	8.508	5.093	7.975	5.075	7.334	5.055
	20	10.166	5.678	9.651	5.419	9.136	5.161	8.621	4.902	8.106	4.644	7.488	4.333
28	18	9.555	7.656	9.094	7.435	8.633	7.213	8.172	6.992	7.711	6.771	7.157	6.505
	19	9.867	7.304	9.414	7.000	8.961	6.697	8.508	6.393	7.975	6.376	7.334	6.355
	20	10.166	6.978	9.651	6.719	9.136	6.461	8.621	6.202	8.106	5.944	7.488	5.634
	21	10.470	6.629	9.927	6.299	9.383	5.969	8.839	5.638	8.295	5.308	7.642	4.912
	22	10.775	6.279	10.202	5.878	9.630	5.476	9.057	5.075	8.484	4.673	7.796	4.191
	23	11.080	5.930	10.478	5.457	9.876	4.984	9.275	4.511	8.673	4.038	7.950	3.470
	24	11.385	5.580	10.754	5.036	10.123	4.491	9.492	3.947	8.862	3.402	8.105	2.749
30	20	10.166	7.628	9.651	7.370	9.136	7.111	8.621	6.852	8.106	6.594	7.488	6.284
	21	10.470	7.279	9.927	6.949	9.383	6.619	8.839	6.289	8.295	5.958	7.642	5.562
	22	10.775	6.929	10.202	6.528	9.630	6.126	9.057	5.725	8.484	5.323	7.796	4.841
	23	11.080	6.580	10.478	6.107	9.876	5.634	9.275	5.161	8.673	4.688	7.950	4.120
	24	11.385	6.230	10.754	5.686	10.123	5.141	9.492	4.597	8.862	4.052	8.105	3.399

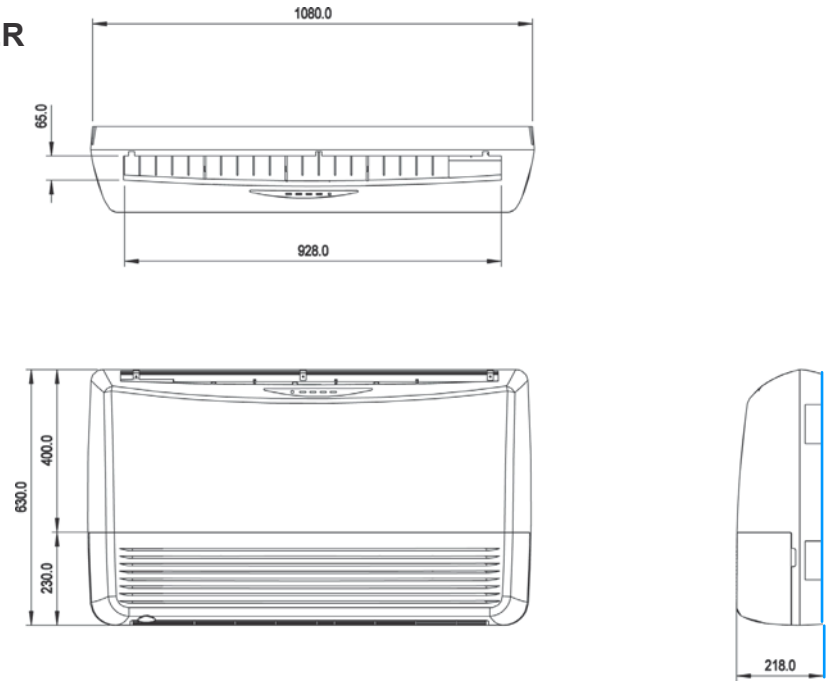
HEATING MODE

ID DB°C	Outdoor WB°C												
	-9		-6		-5		6		12		15		18	
	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)	TC(kW)	SC(kW)
15	5.315	5.315	6.016	6.016	6.250	6.250	8.819	8.819	10.220	10.220	10.921	10.921	11.622	11.622
17	5.176	5.176	5.954	5.954	6.090	6.090	8.808	8.808	9.974	9.974	10.660	10.660	11.345	11.345
19	5.037	5.037	5.893	5.893	5.930	5.930	8.798	8.798	9.729	9.729	10.399	10.399	11.069	11.069
21	4.897	4.897	5.751	5.751	5.771	5.771	8.612	8.612	9.483	9.483	10.138	10.138	10.793	10.793
23	4.758	4.758	5.530	5.530	5.611	5.611	8.250	8.250	9.237	9.237	9.877	9.877	10.517	10.517
25	4.619	4.619	5.310	5.310	5.452	5.452	7.888	7.888	8.992	8.992	9.616	9.616	10.241	10.241
27	4.479	4.479	5.089	5.089	5.292	5.292	7.527	7.527	8.746	8.746	9.355	9.355	9.965	9.965
	FROST REGION													

7. OUTLINES AND DIMENSIONS

INDOOR UNIT

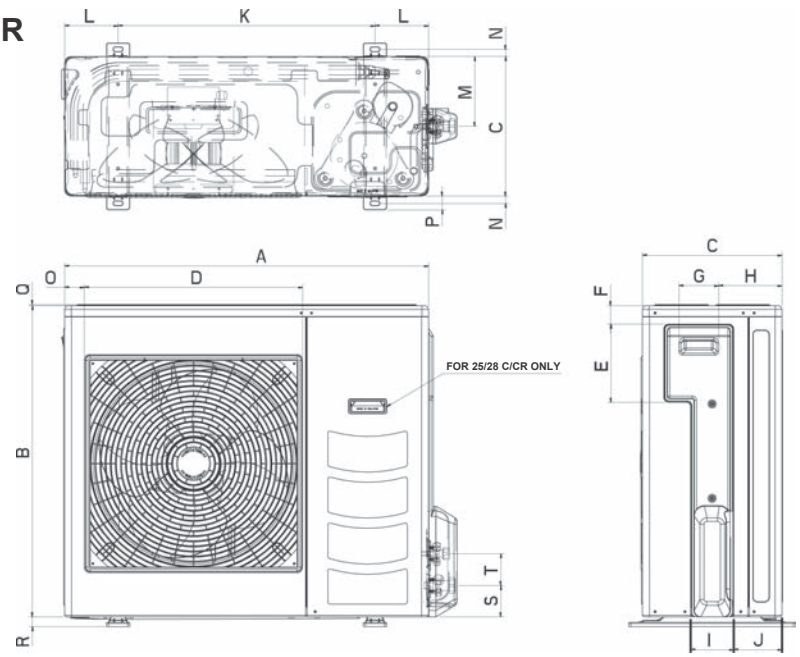
A5CM 20/25/28E/ER



Note : Dimension in mm

OUTDOOR UNIT

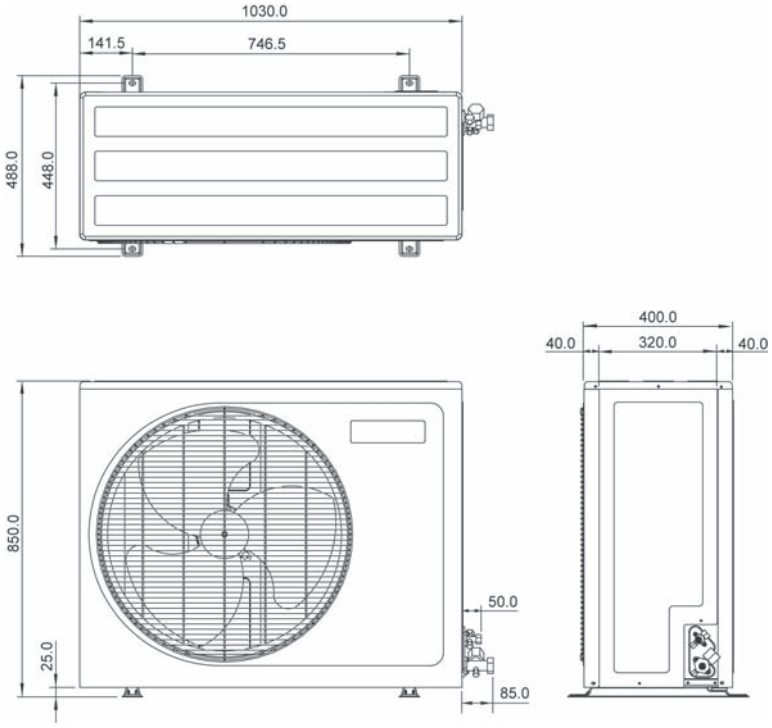
A5LC 20/25/28C/CR



MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
ALC 18C, ALC/A5LC 20C/CR	855	628	328	508	181	44	93	149	101	113	603	126	164	17	49	32	3	23	73	75
ALC / A5LC 25/28 C/CR	855	730	328	513	182	44	93	149	101	113	603	126	164	17	47	32	3	23	73	75

Note : Dimension in mm

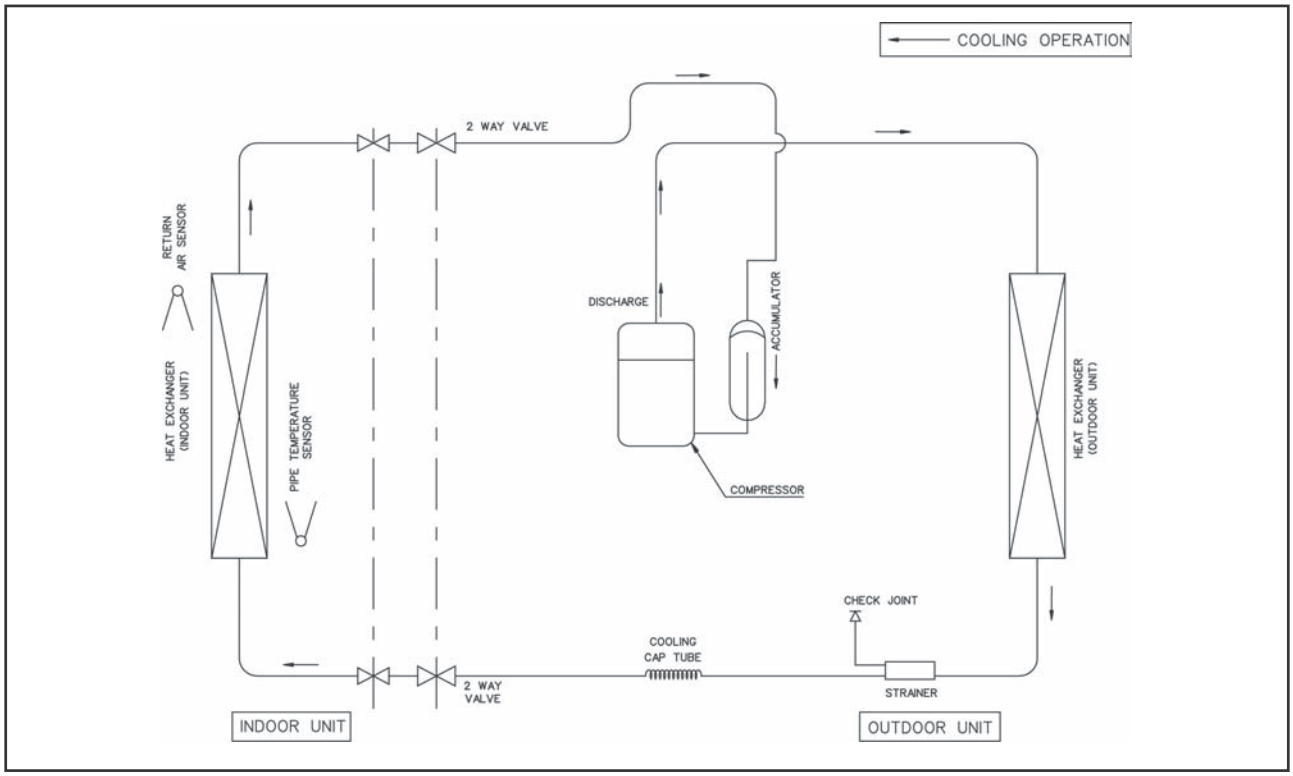
A5LC 35C/CR



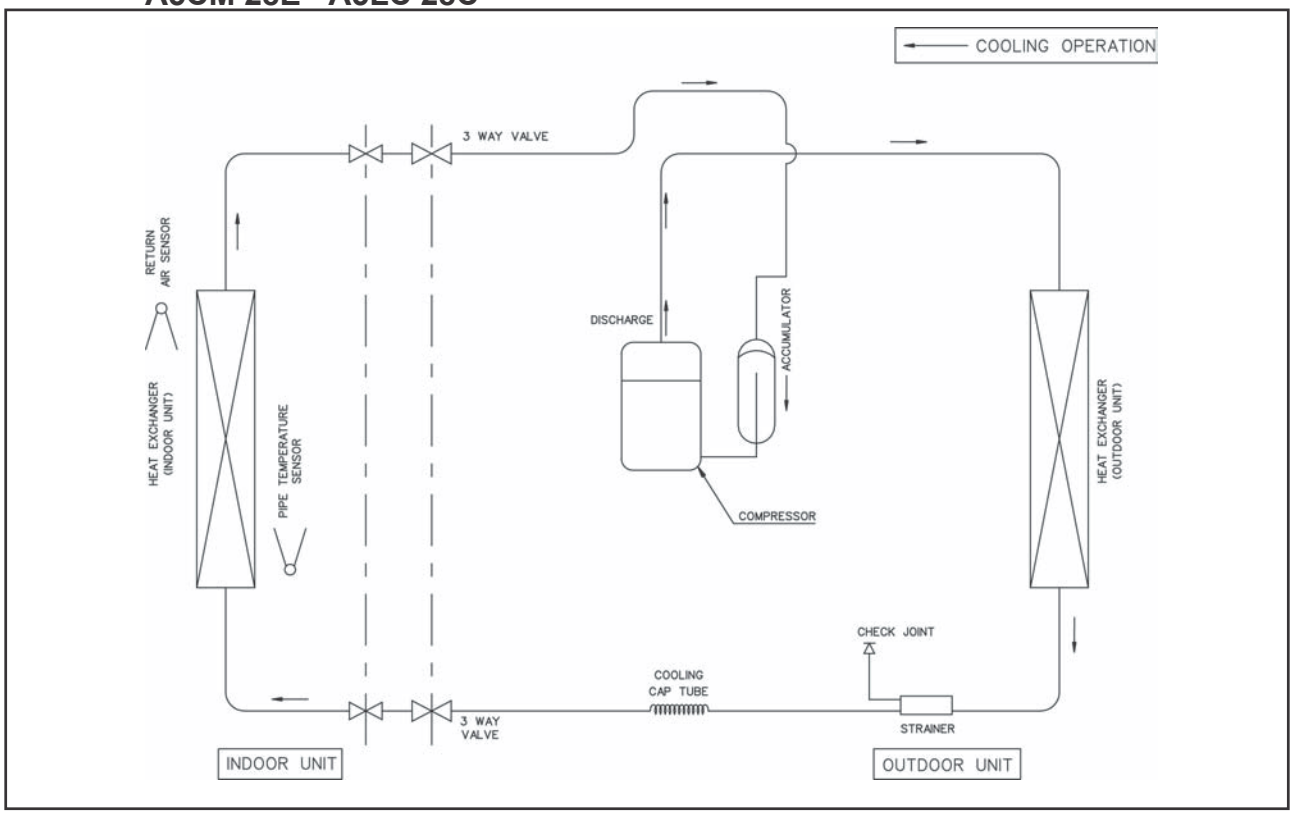
Note : Dimension in mm

8. REFRIGERANT CIRCUIT DIAGRAMS

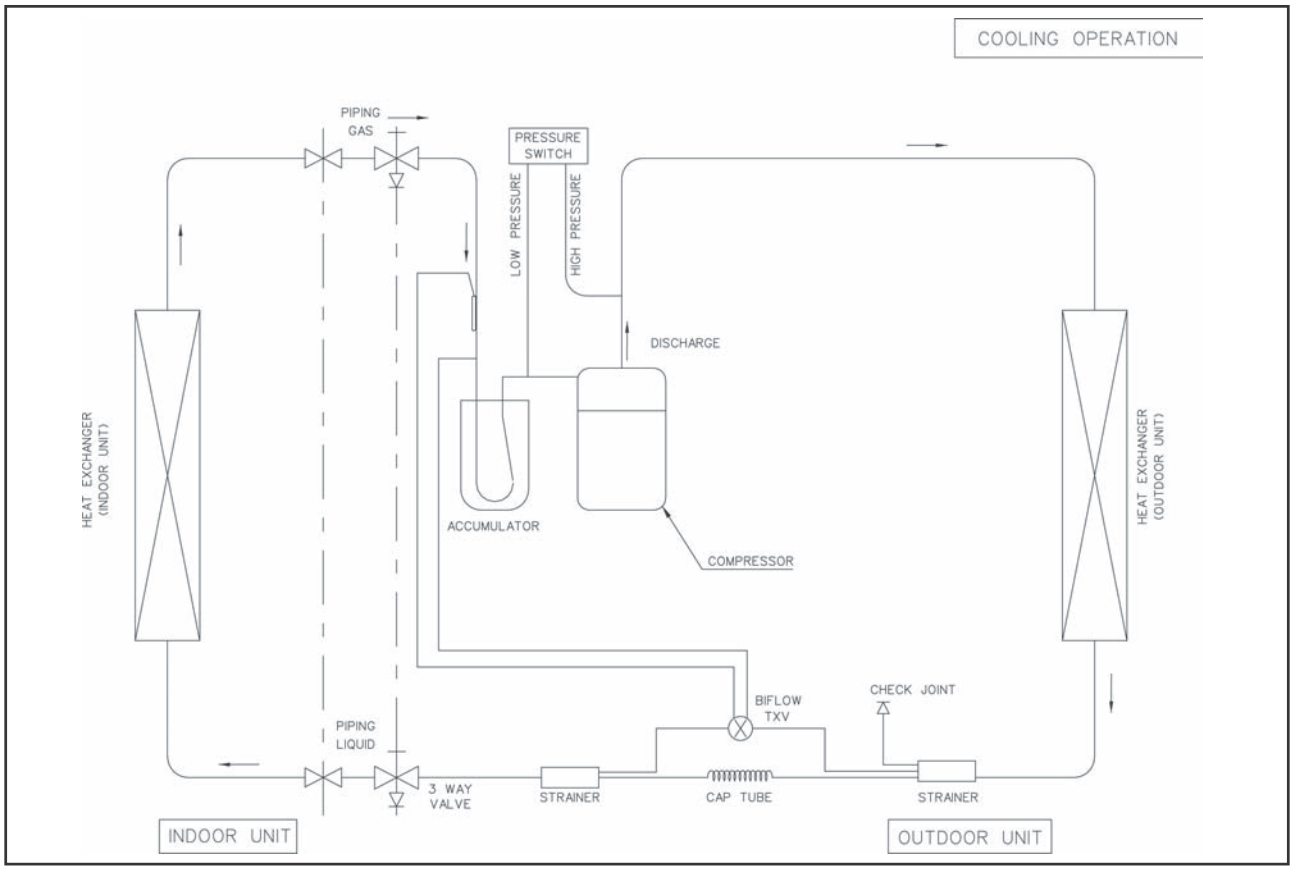
MODEL : A5CM 20E - A5LC 20C



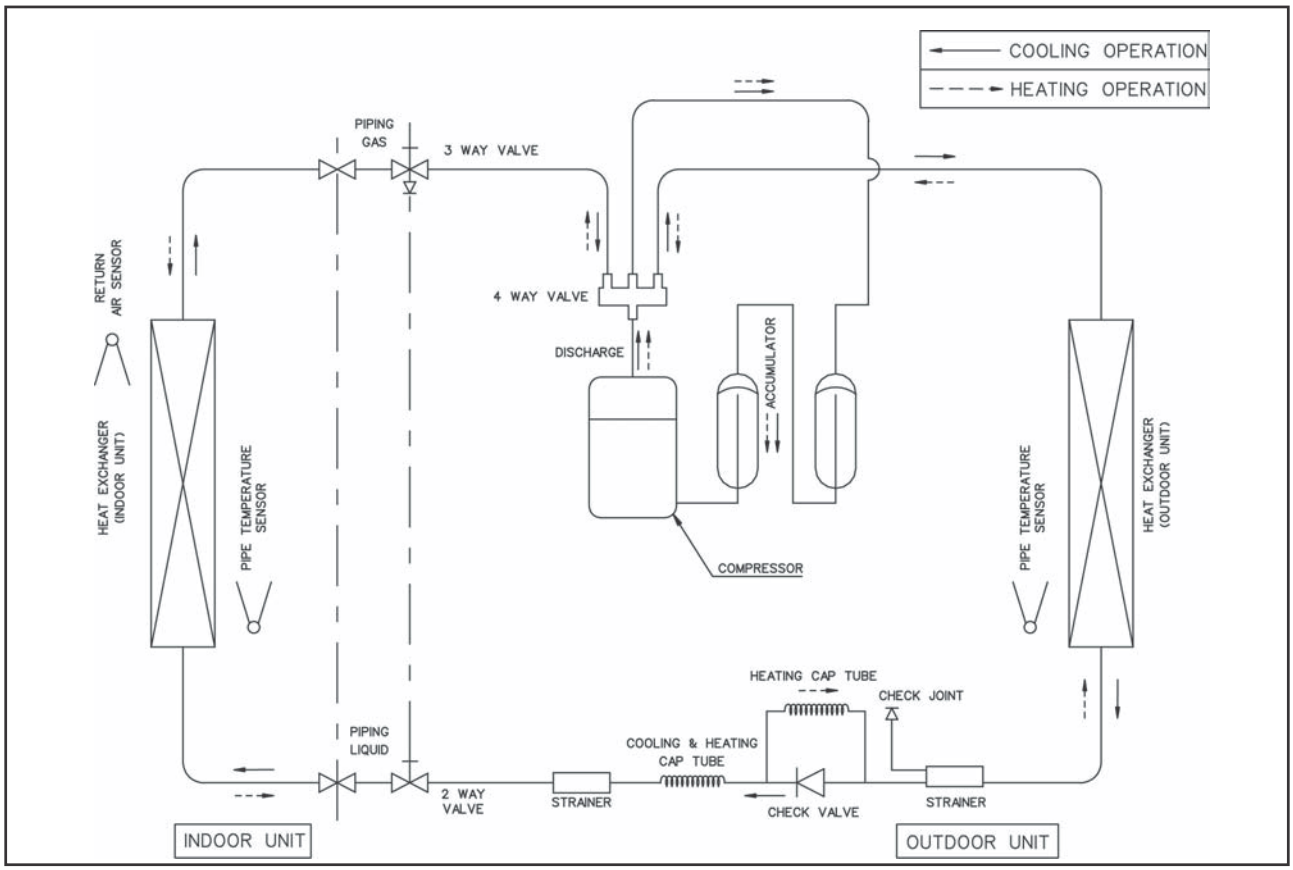
MODEL : A5CM 25E - A5LC 25C
A5CM 28E - A5LC 28C



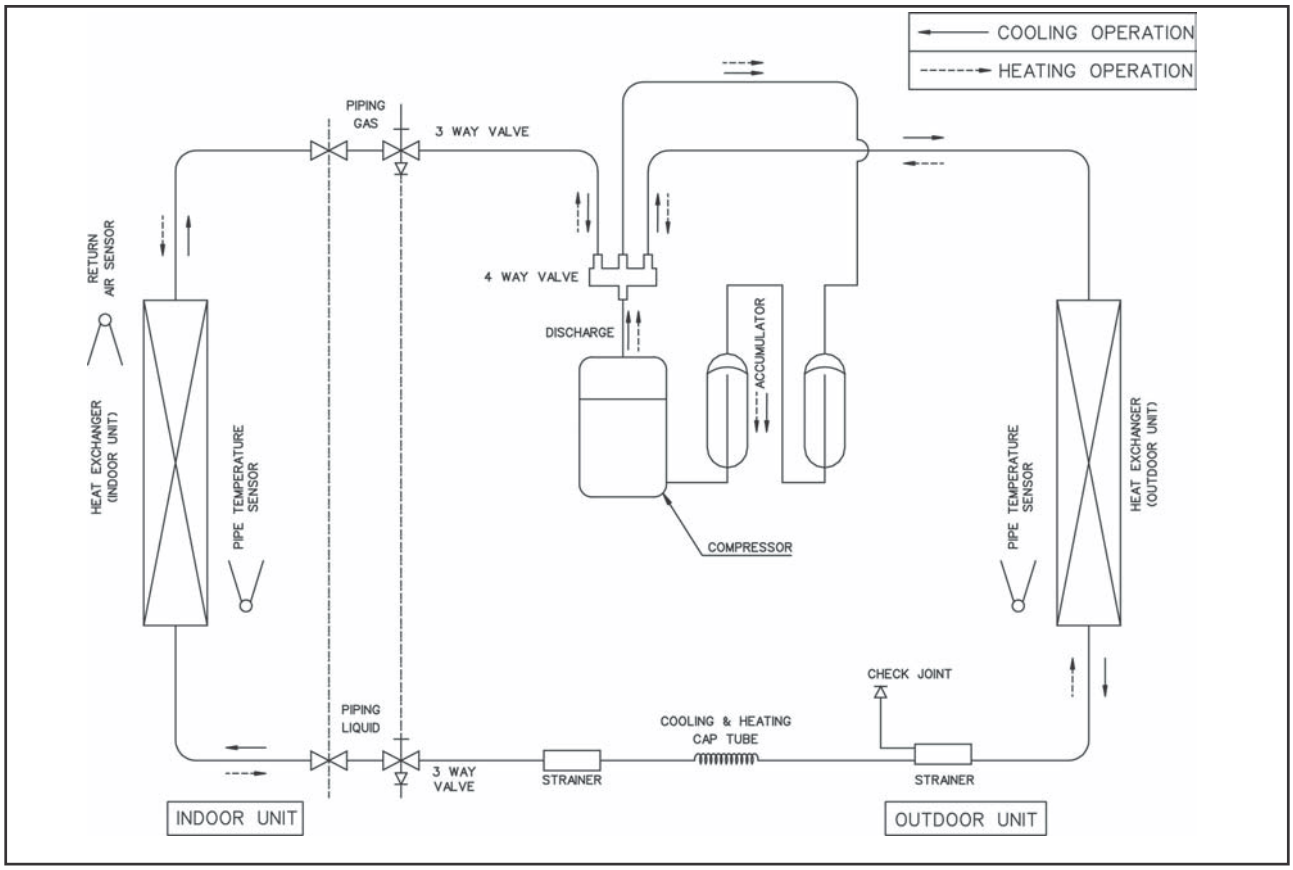
MODEL : A5CM 28E - A5LC 35C



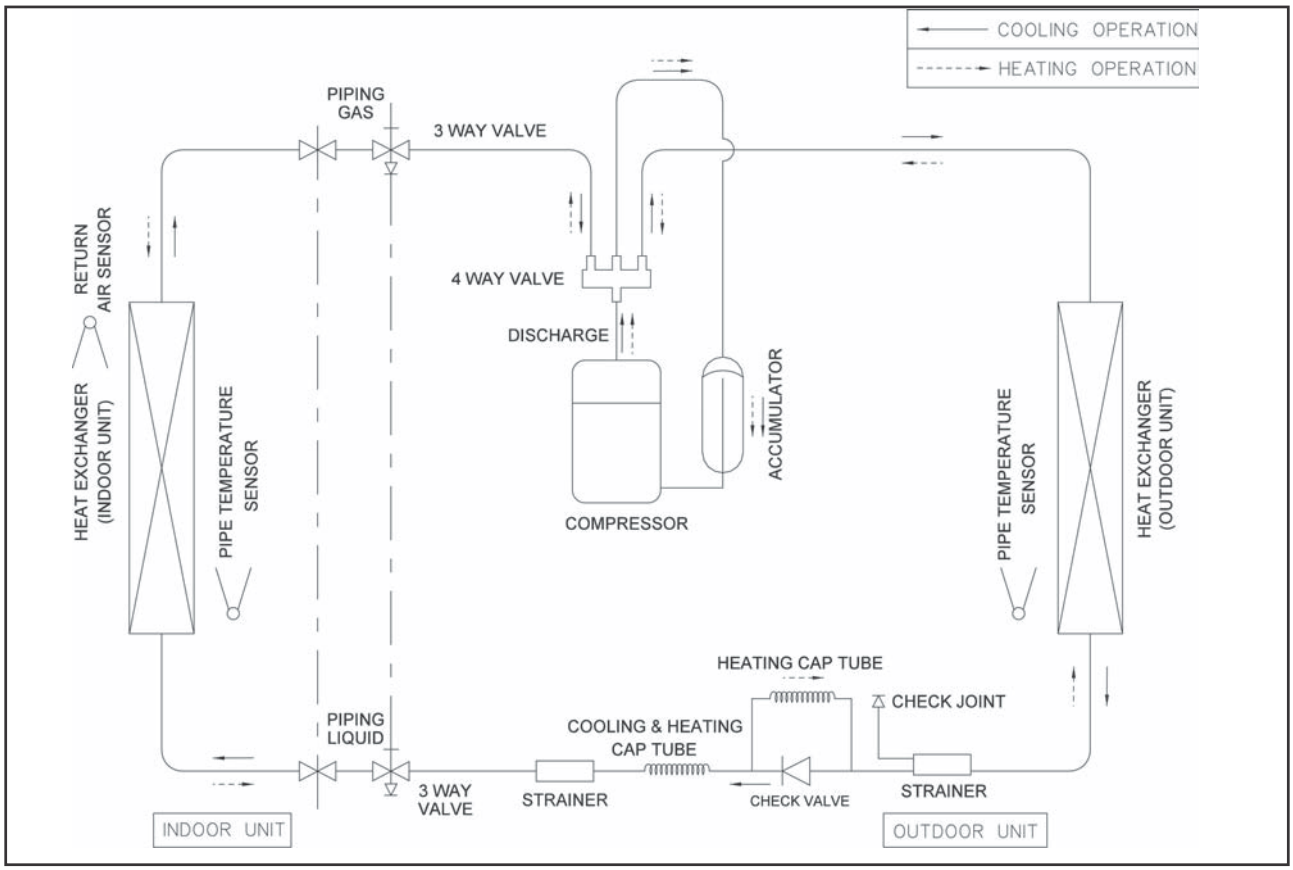
MODEL : A5CM 20ER - A5LC 20CR



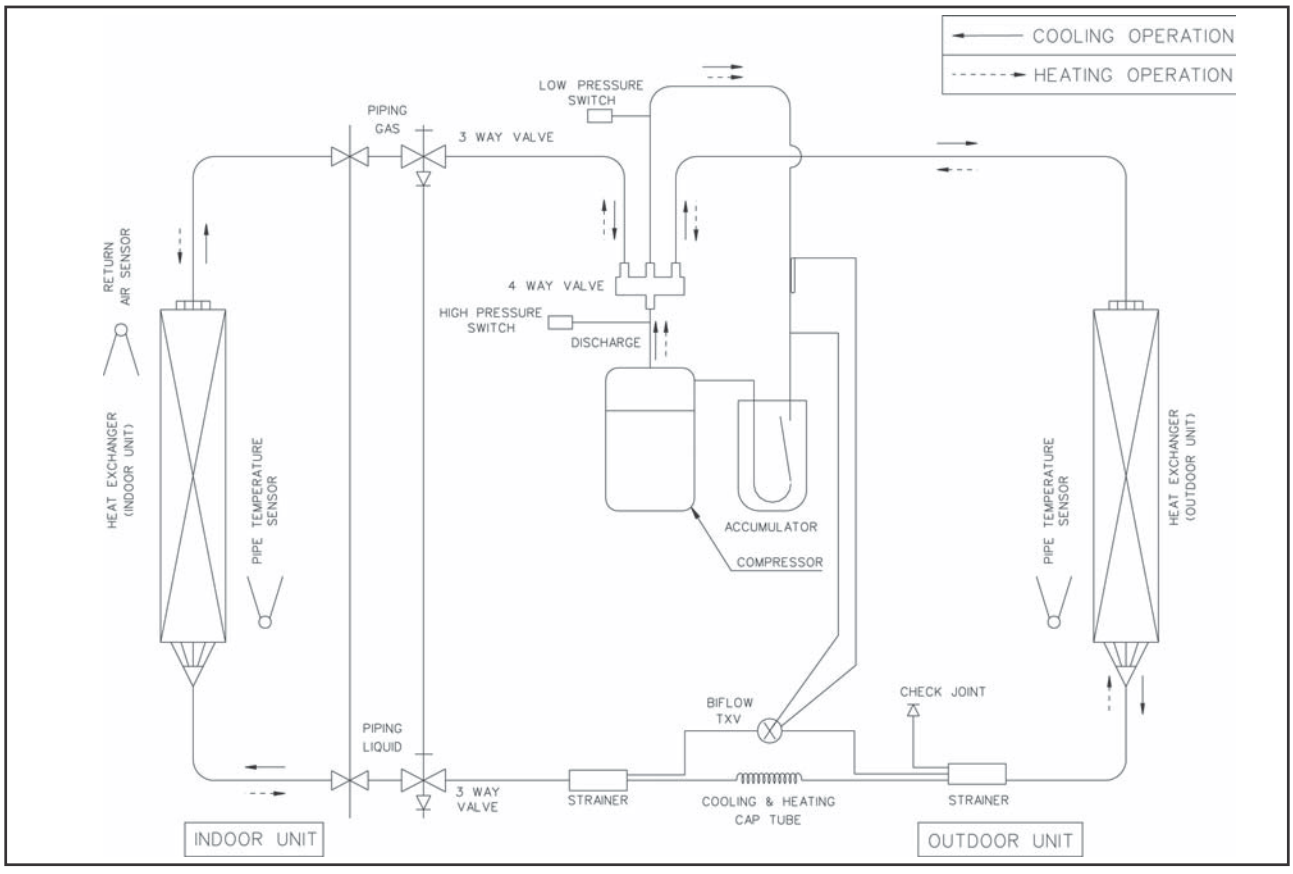
MODEL : A5CM 25ER - A5LC 25CR



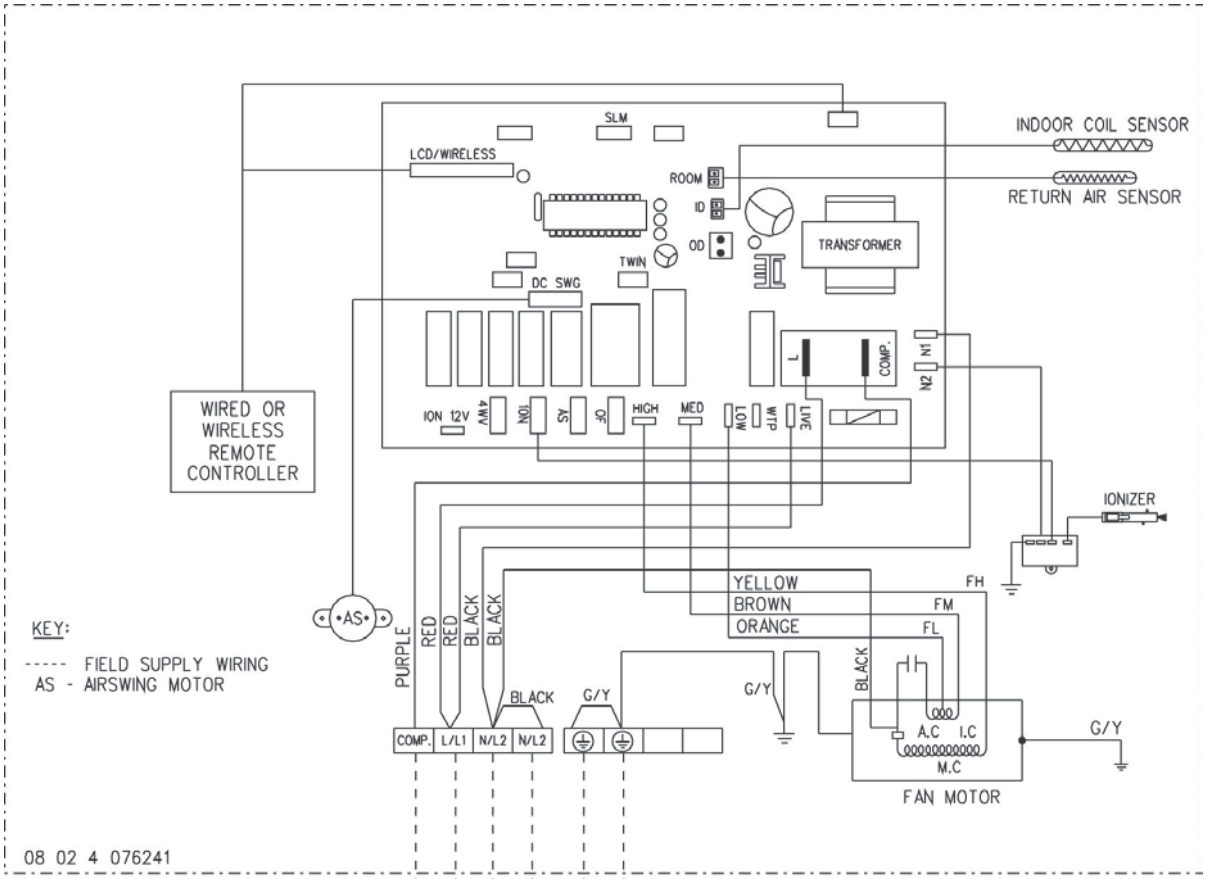
MODEL : A5CM 28ER - A5LC 28CR



MODEL : A5CM 28ER - A5LC 35CR

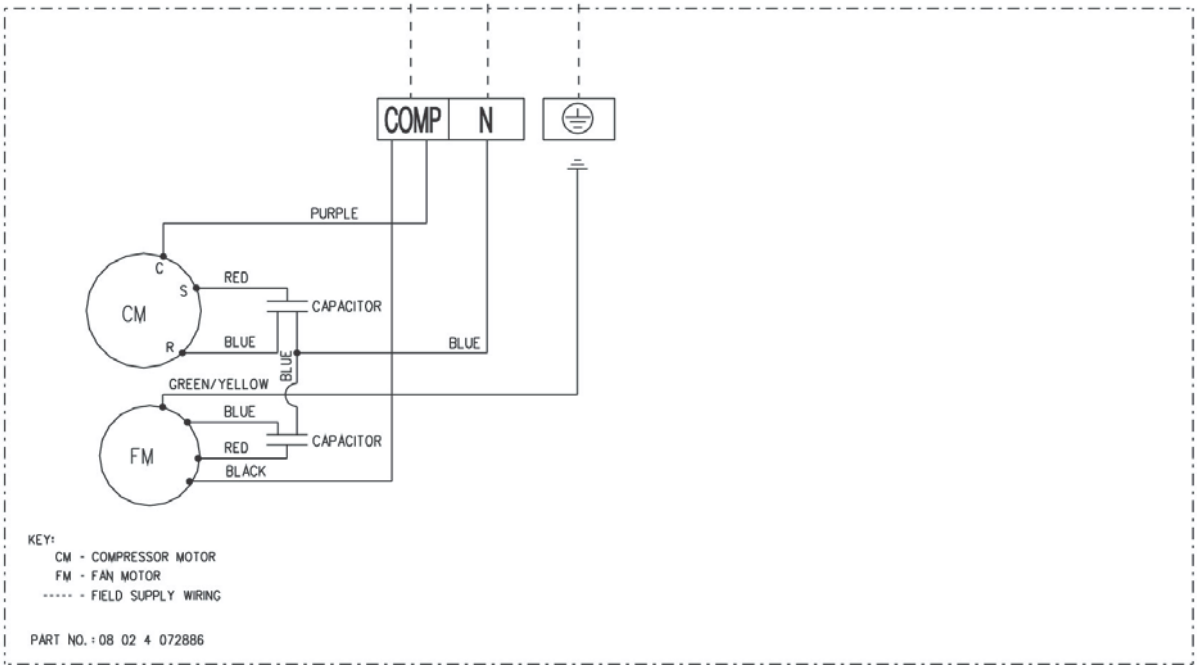


INDOOR UNIT
MODEL: A5CM 20/25E (WITH IONIZER)

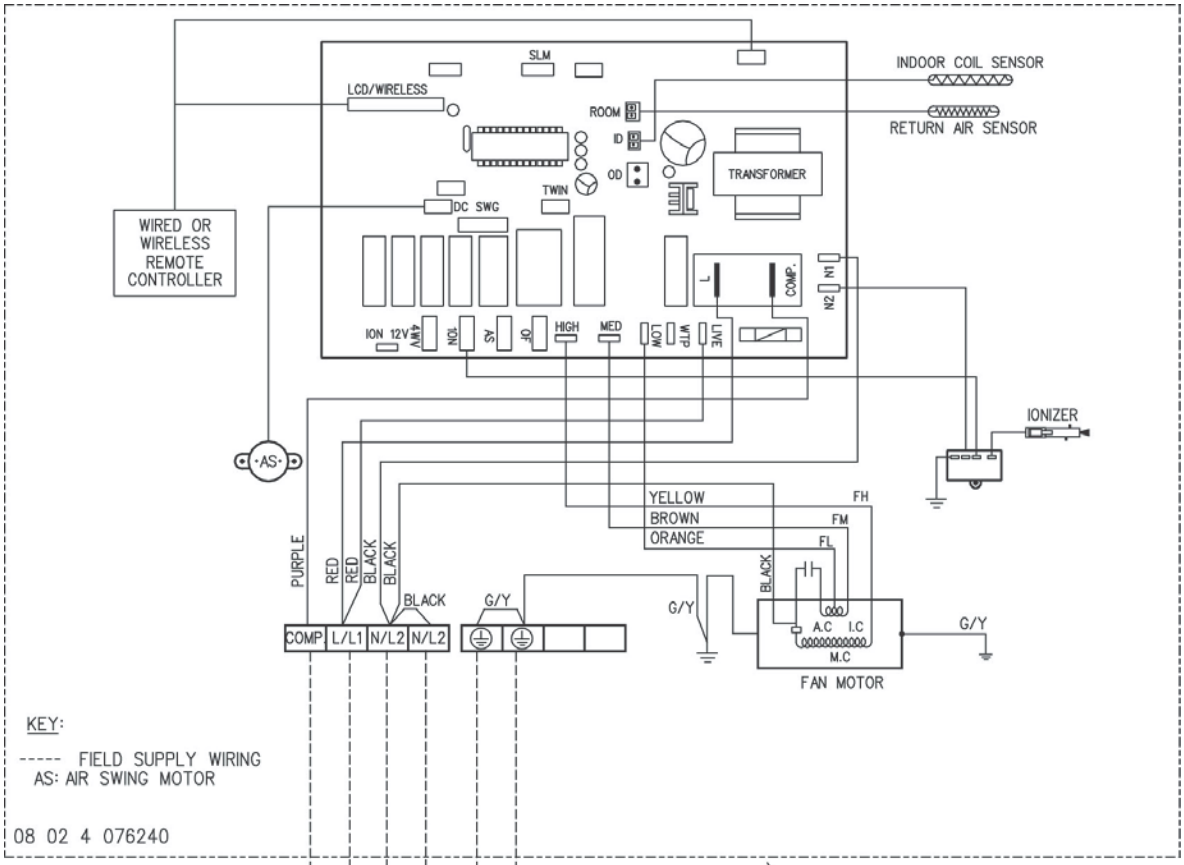


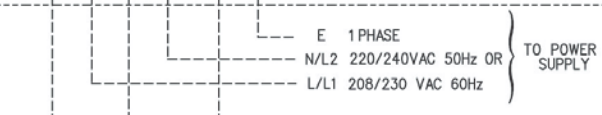
E 1PHASE
N/L2 220/240VAC 50Hz OR
L 208/230 VAC 60Hz

OUTDOOR UNIT
MODEL: A5LC 20/25C

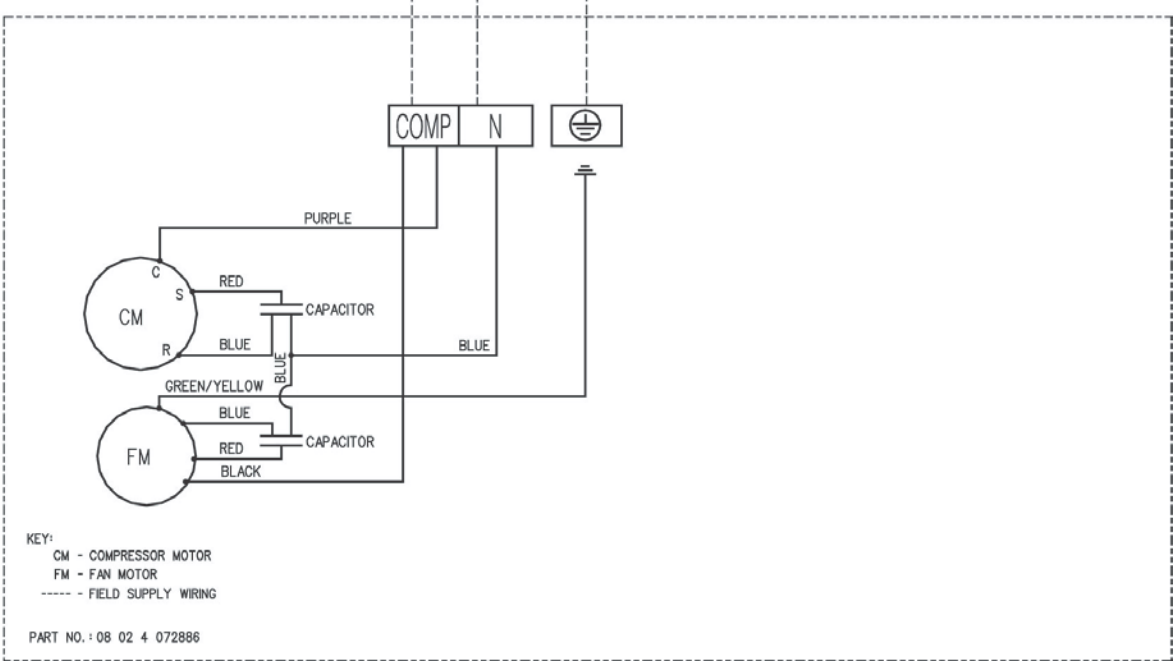


INDOOR UNIT
MODEL: A5CM 28E (WITH IONIZER)

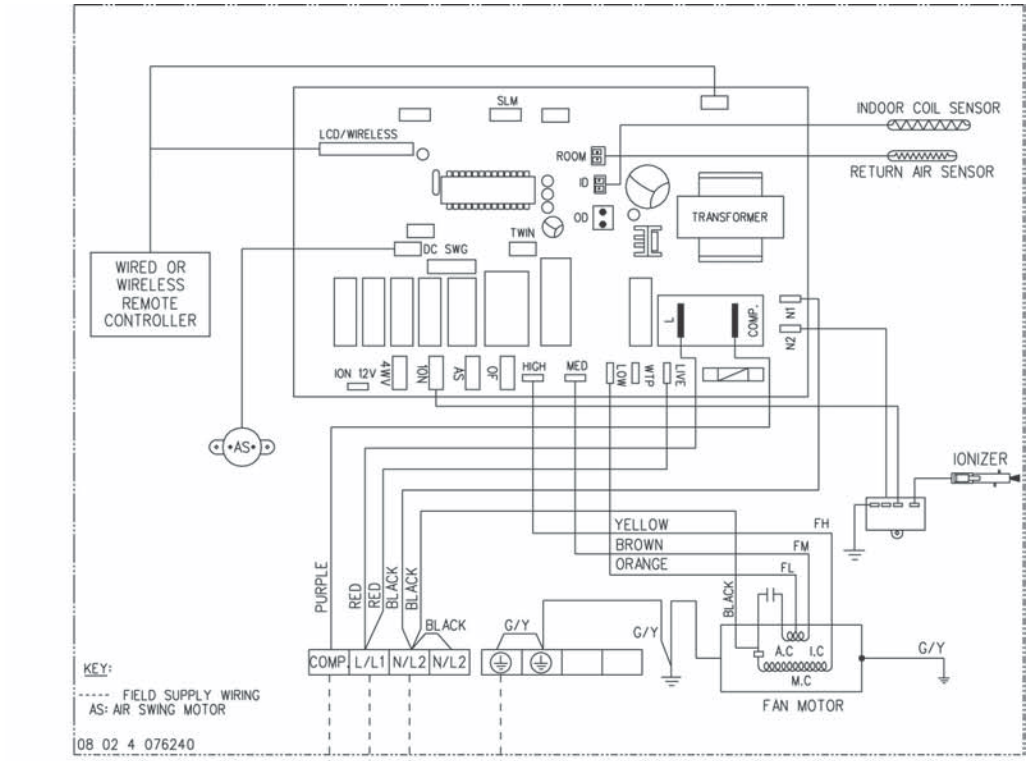


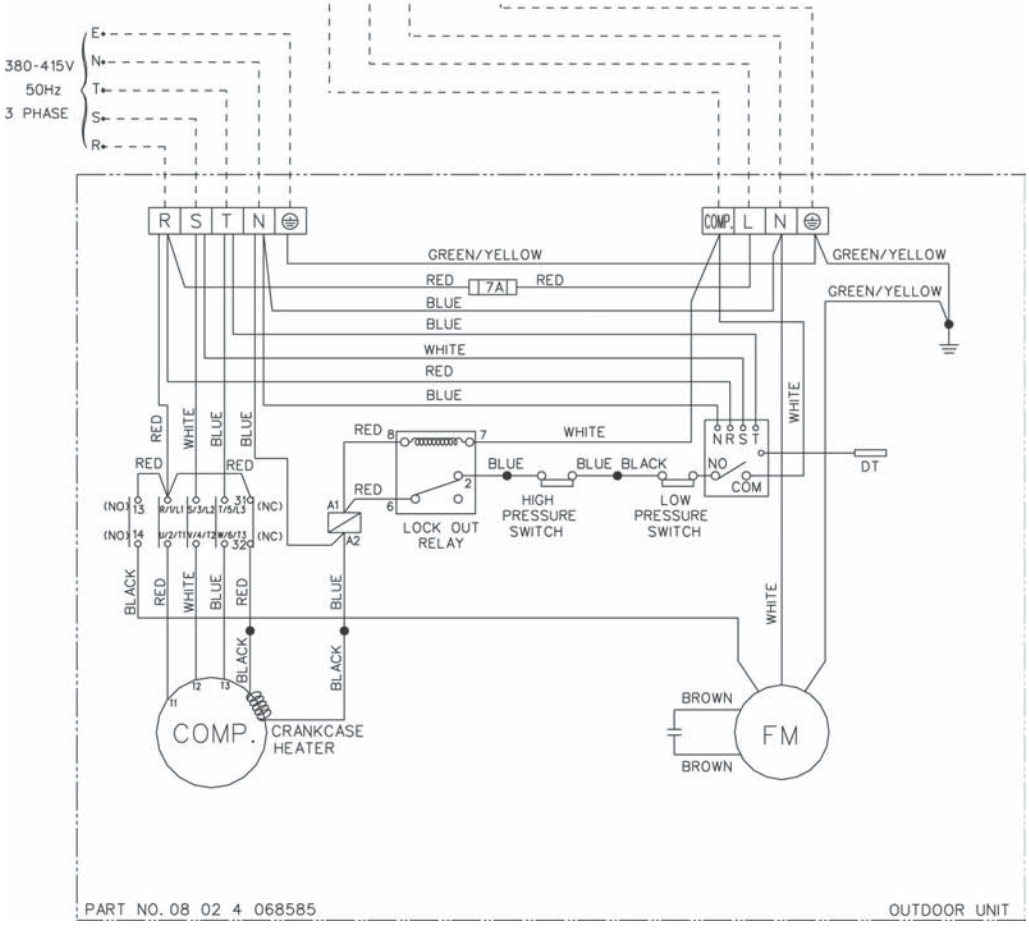


OUTDOOR UNIT
MODEL: A5LC 28C



INDOOR UNIT
MODEL: A5CM 28E (WITH IONIZER)

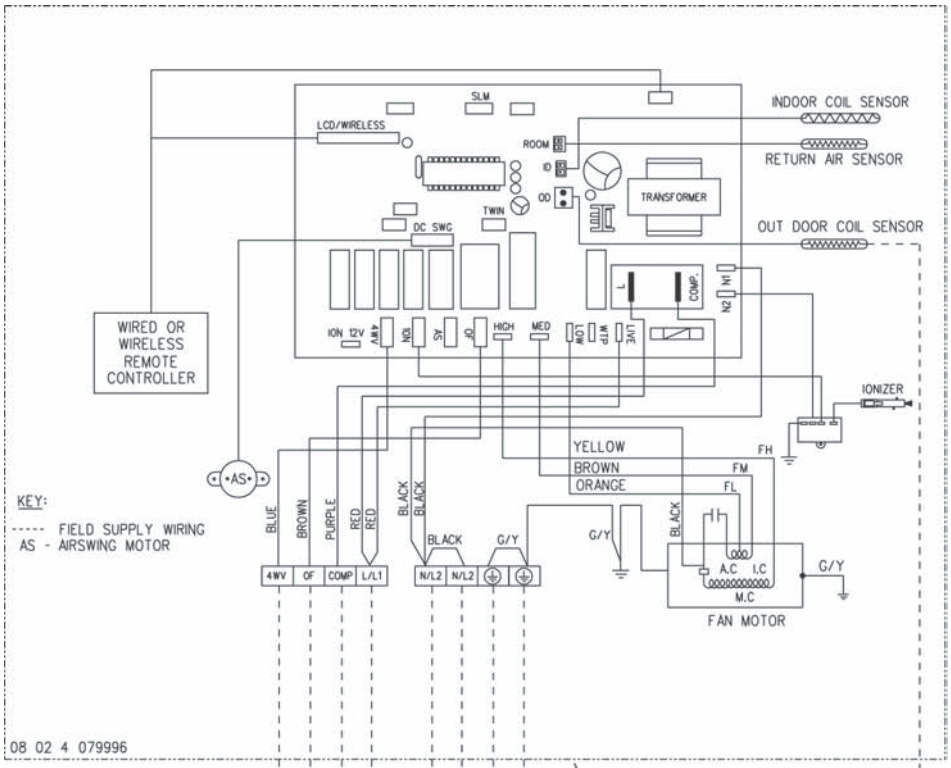




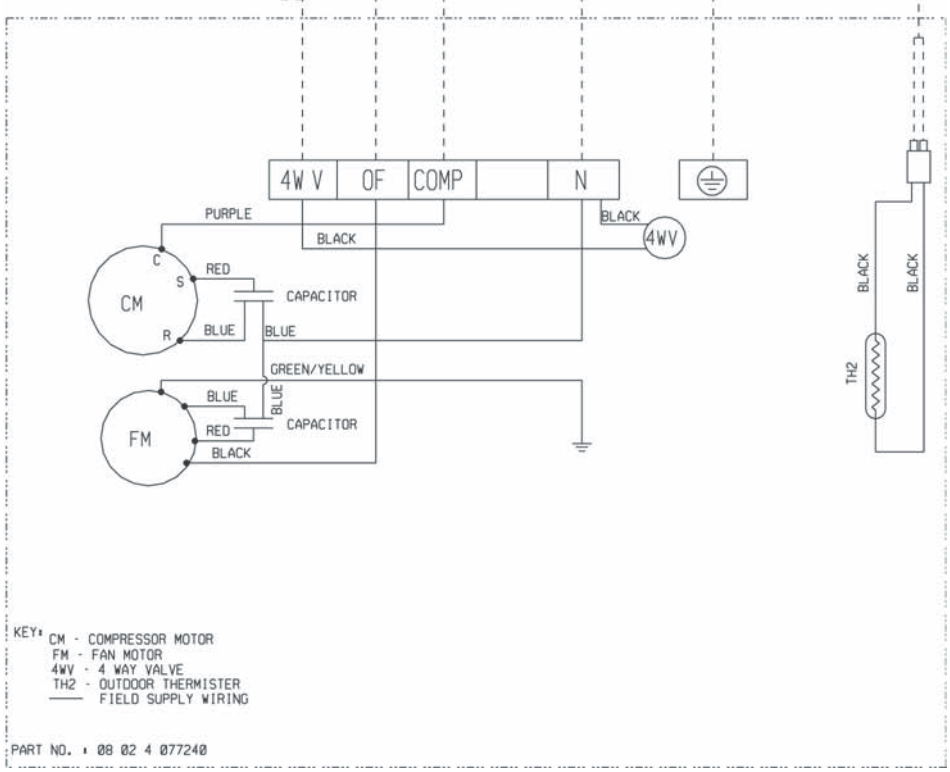
OUTDOOR UNIT
MODEL: A5LC 35C

HEATPUMP

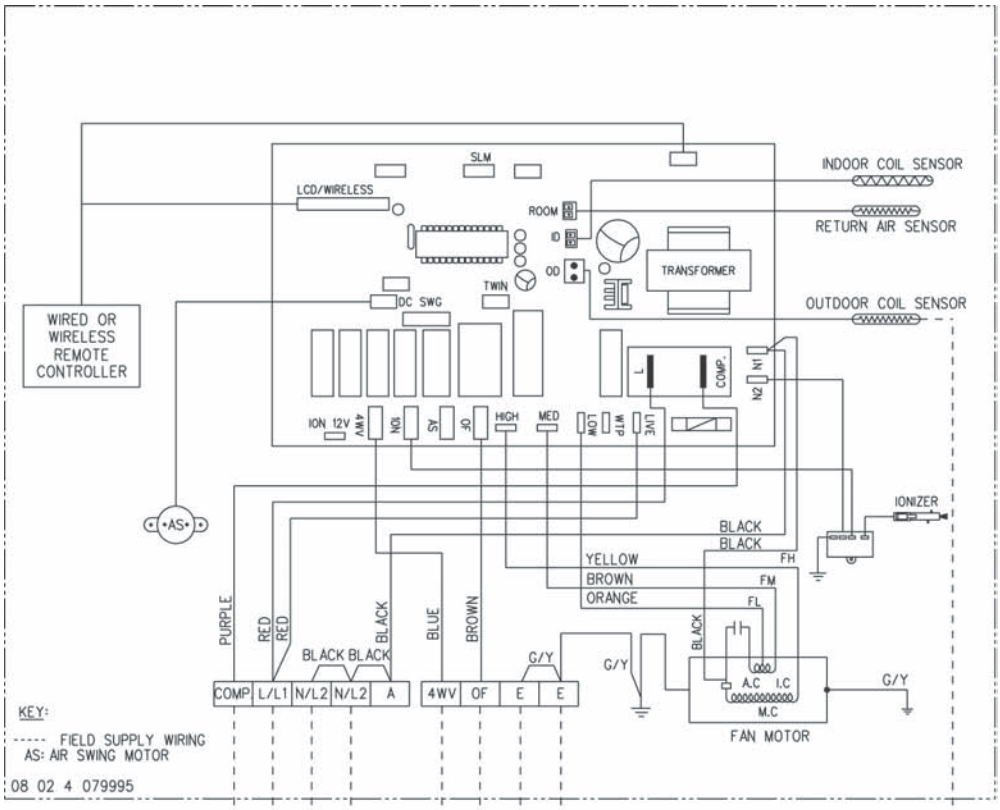
INDOOR UNIT
MODEL: A5CM 20/25ER (WITH IONIZER)



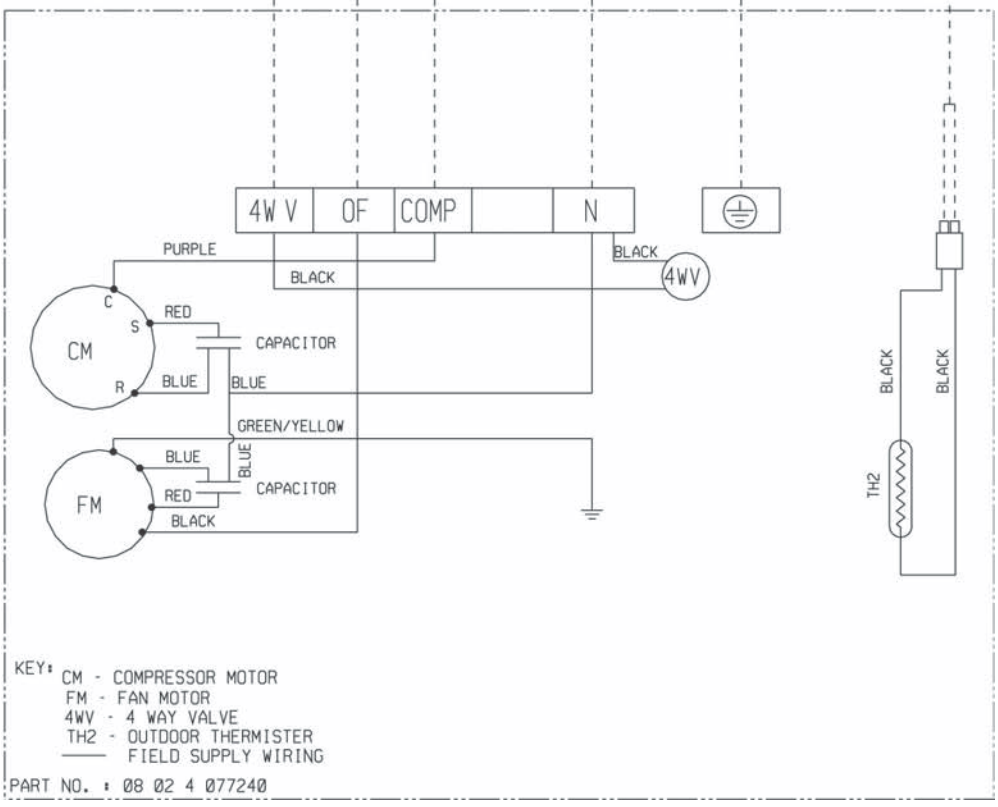
OUTDOOR
MODEL: A5LC 20/25CR



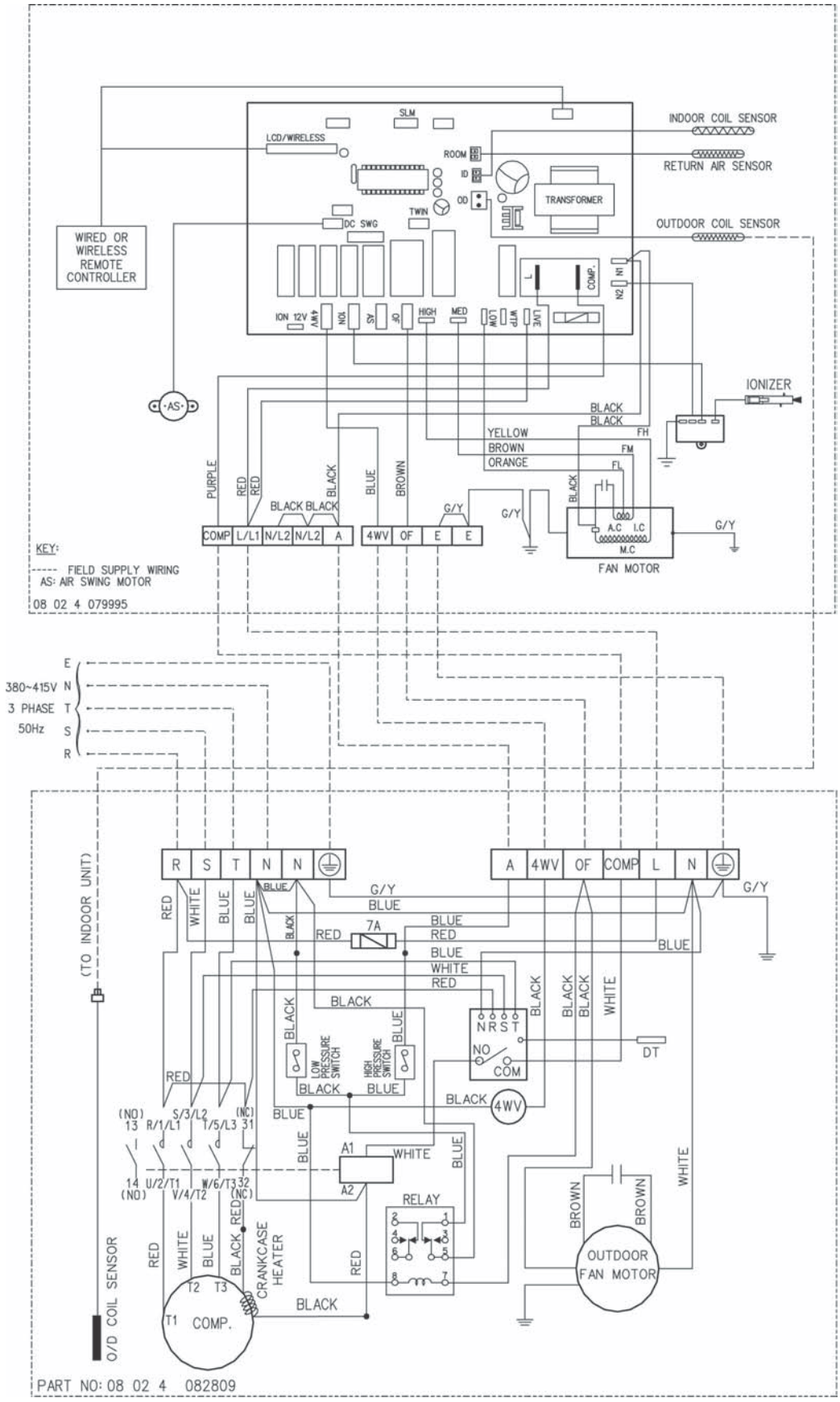
INDOOR UNIT
MODEL: A5CM 28ER (WITH IONIZER)



OUTDOOR UNIT
MODEL: A5LC 28CR



INDOOR UNIT
MODEL: A5CM 28ER (WITH IONIZER)



OUTDOOR UNIT
MODEL: A5LC 35CR

10. CONTROLLER

G12 REMOTE CONTROLLER

Temperature Setting

- To set the desired room temperature, press the button to increase or decrease the set temperature.
- The temperature setting range is from 16∀C to 30∀C
- Press both buttons simultaneously to toggle the temperature setting between ∀C and ∀F

On/Off Button

- Press Once to start the air conditioner
- Press again to stop the unit

ON Timer Setting

- Press the SET button will activate the on timer function.
- Set the desired on time by pressing the SET button continuously.
- Press the CLR button to cancel the off timer setting

Fan Speed Selection

- Press the button until the desired fan speed is achieved.

Turbo Mode

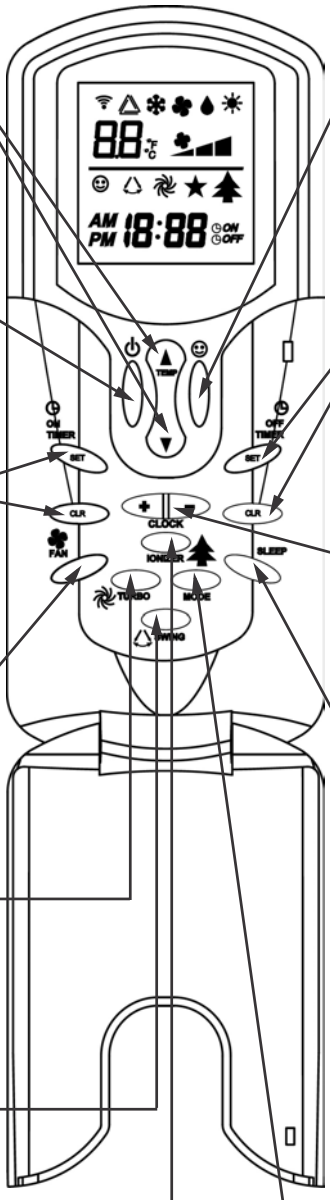
- Press the TURBO button to achieve the required set temperature in a short time.

Automatic Air Awing

- Press the SWING button to activate the automatic air swing function.
- To distribute the air to a specific direction, press the SWING button and wait until the louver move to the desired direction and press the button once again.

Ionizer

- Press the button to activate the negative Ion function, which will refresh the indoor air effectively.



Personalised Setting

- Press and hold the button for 3s to initiate personalized setting.
- Set the individual setting e.g. MODE, SET TEMP or FAN SPEED and leave for 4s to save
- 2 groups of settings are allowed to stored in the handset

OFF Timer Setting

- Press the SET button will activate the off timer function.
- Set the desired off time by pressing the SET button continuously.
- Press the CLR button to cancel the off timer setting

Clock Time Setting

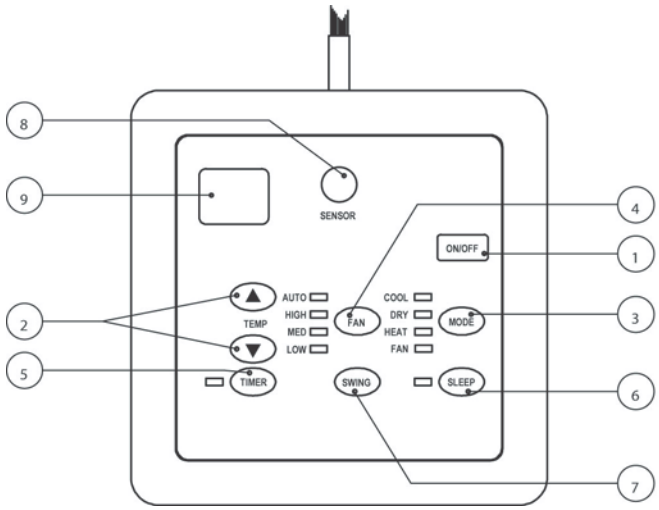
- Press button + or - to increase or decrease the clock time.

Sleep Mode

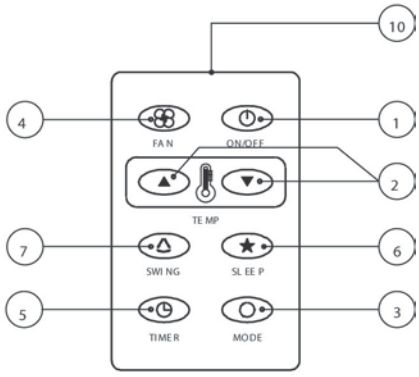
- Press the button to activate sleep mode. This function is available under COOL, HEAT & AUTO mode.
- When it is activated in COOL mode, the set temperature will be increased 0.5∀C after 30mins, 1∀C after 1 hour and 2∀C after 2 hours.
- When it is activated in HEAT mode, the set temperature will be decreased 1∀C after 30mins, 2∀C after 1 hour and 3∀C after 2 hours.

Operating Mode

- Press the MODE button to select the type of operating mode.
- For Cooling only unit, the available modes are: COOL, DRY & FAN.
- For Heatpump unit, the available modes are: AUTO, COOL, DRY, FAN & HEAT.



SLM



AC-5300 (OPTIONAL)

1. "ON/OFF" switch

- Press to start the air conditioner unit.
- Press again to stop the unit.

2. Temperature setting

- Set the desired room temperature.
- Press button to increase or decrease the set temperature. Setting range are between 16°C to 30°C (60°F to 80°F).

3. Operation Modes

- Press the "mode" button for select the type of operating mode.

  - Cooling Only :
    COOL, DRY, FAN
  - Heat Pump :
    AUTO, COOL, DRY, HEAT, FAN
    (AUTO mode is represented by bothCOOL and HEAT LED light on)

4. Fan Speed selection

- Press the button until the desired fan speed is achieved.

5. Timer

- Press the set button to select the switch timer of the air conditioner unit (the setting range is between 1 to 10 hours).

6. "Sleep" mode

- Press button to activate the sleep function can only be activated under "cool" or heating mode operation. When it is activated under "cool" mode operation, the set temperature will increase 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours. If it is actiaved under "HEAT" mode operation, the set temperature will be descreased 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours.

7. Air Swing

- Press button to activate the automatic air swing function.

8. Sensor

- Infra red sensor to receive signals from wireless controller.

9. LED Display

- To display the set temperature (in °C) and timer delay setting (in hours).

10. Transmission source

- To transmit signals to the air conditioner.

Operating State and Fault Table

Wireless Remote Control – Handset
LED Indicator Light Display

Cooling Only

Heatpump

COOL	DRY	FAN	HEAT	Normal Operation / Fault Indication
○				Cool mode
			○	Heat mode
	○			Dry mode
		○		Fan mode
○			◑	Auto mode in cooling operation
◑			○	Auto mode in heating operation
			◑	Defrost operation
		◑		Room air sensor open or short
	◑			Outdoor coil sensor open
◑				Compressor overload / indoor coil sensor short / outdoor coil sensor short
◑	◑			Gas leak
◑		◑		Water pump

○ - ON ◑ - Blinking

Wired Remote Control – SLM

Cooling / Heatpump Model

Error Code at 7 Segment Display	Operation / Faulty Indication
Blink E1	Room sensor open or short
Blink E2	Indoor coil sensor open
Blink E3	Outdoor coil sensor open
Blink E4	Compressor overload / Indoor coil sensor short / Outdoor coil sensor short
Blink E5	Gas leak
Blink E6	Water pump faulty

Phase Sequencer

	LED_P	LED_R	LED_S	LED_T
	(Red)	(Yellow)	(Yellow)	(Yellow)
Normal Operation	On	-	-	-
Reverse Phase	Blink	Blink	Blink	Blink
S & T Phase Missing	Blink	-	Blink	Blink
T Phase Missing	Blink	-	-	Blink
S Phase Missing	Blink	-	Blink	-
R Phase Missing	-	-	-	-
Overload	Blink	-	-	-
Sensor Missing	Blink	On	On	On

Notes: 1. "-" means LED off.

2. When R phase missing, no LED or buzzer will indicate the error, but relay 71 (Common) and 81 (NO) will cut off.

3. The unit will check the discharge sensor availability only during power up.

4. All errors can only recover through manually reset.

11. INSTALLATION

Caution

Sharp edges and coil surfaces are potential injury hazard. Avoid from contact with them.

(1) Installation of Indoor Unit

Preliminary Site Survey

- Electrical supply and installation is to confirm to local authority's (e.g. National Electrical Board) codes and regulations.
- Voltage supply fluctuation must not exceed ± 10% of rated voltage. Electricity supply lines must be independent of welding transformers which can cause high supply fluctuation.
- Ensure that the location is convenient for wiring, piping and drainage.

Standard Mounting

Ensure that the overhead supports are strong enough to hold the weight of the unit. Position the hanger rods (wall mounting bracket for floor standing), and check for its alignment with the unit as shown in Figure A. Also, check that the hangers are secured and the base of the fan coil unit is leveled in both horizontal directions, taking into account the gradient for drainage flow as recommended in Figure B.

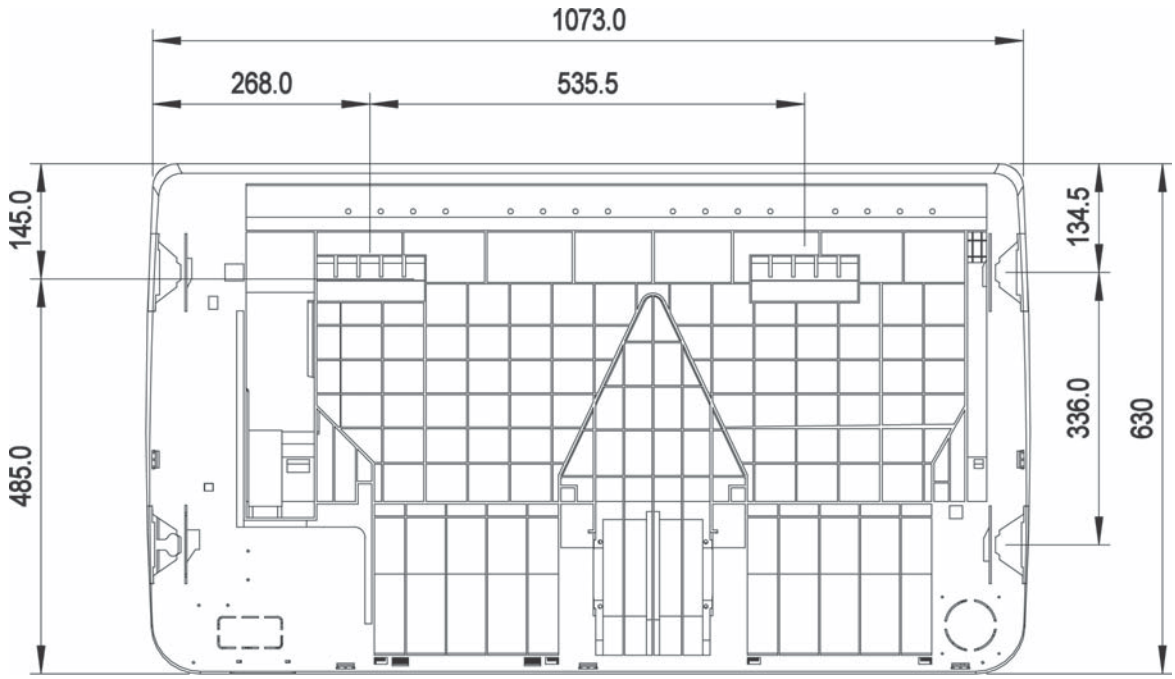
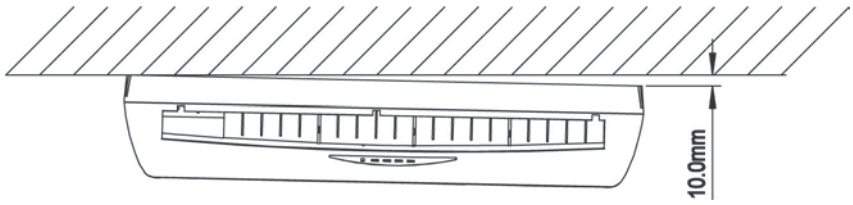


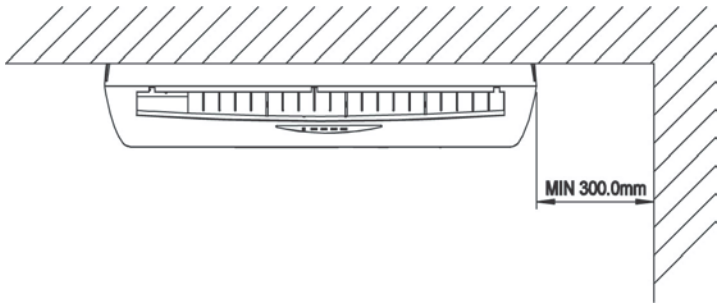
Figure A

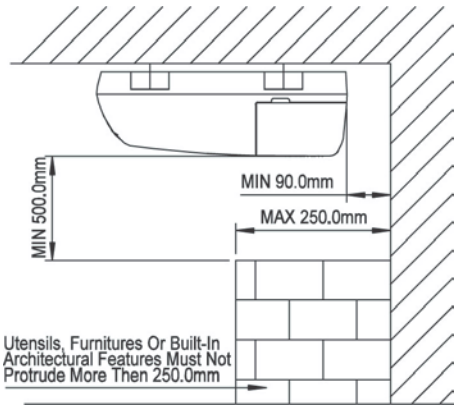
Please ensure that the following steps are taken:

- ⊄ Check the gradient for drainage flow as recommended in Figure B.
- ⊄ Provide clearance for easy servicing and optimal air flow as shown in Figure C.
- ⊄ The indoor unit must be installed such that there is no short circuit of the cool discharge air with the warm return air.
- ⊄ Don not install the indoor unit where there is direct sunlight shining on the unit. The location should be suitable for piping and drainage installation. The unit must be a large distance away from the door.

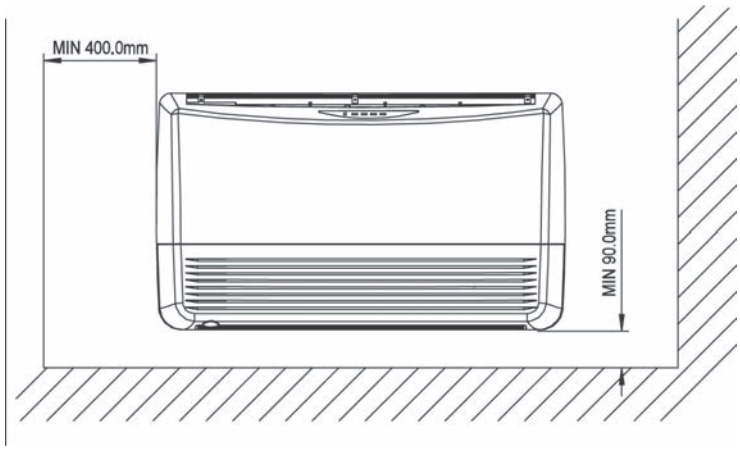


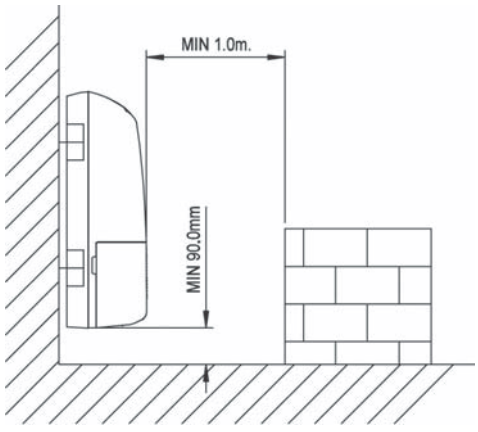
Figue B





Under ceiling type





Floor standing type

Figue C

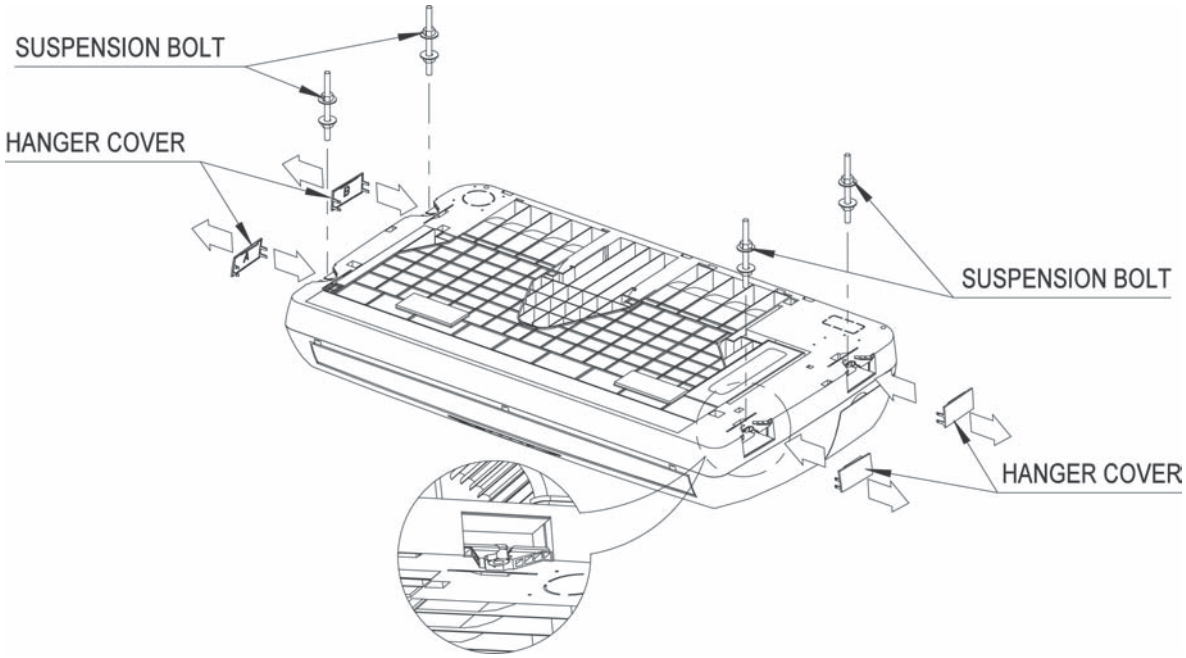
Under Ceiling Installation

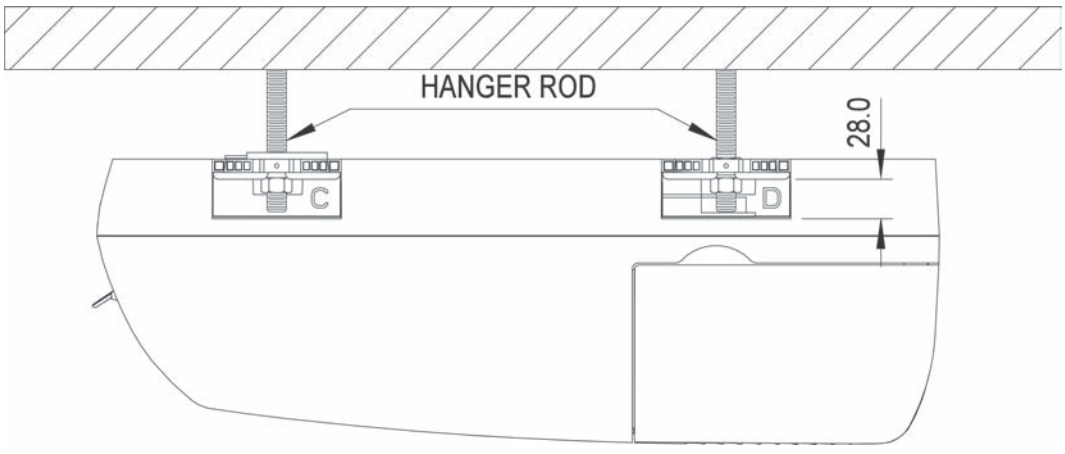
Install the Suspension Bolts

1. Install the suspension bolts so that it can support the indoor unit.
2. Adjust the distance to ceiling before installation.
3. Refer to the dimension given (Figure A) to install the unit.

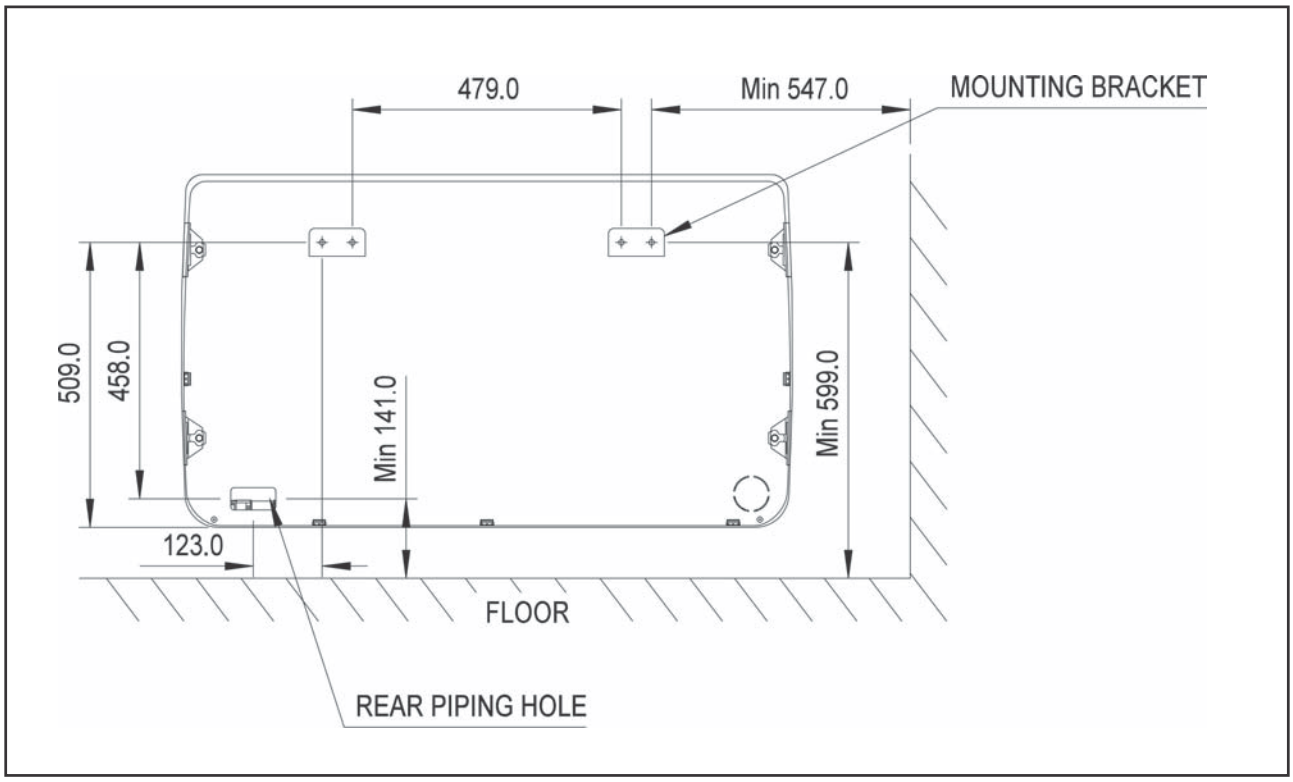
Install the Indoor Unit

1. Insert the suspension bolts into the fittings of the hanger bracket.
2. Set the nuts and washer on the both side of the metal fittings.
3. Secure it with nuts.
4. Attach the hanger cover (4 pcs) to the units.

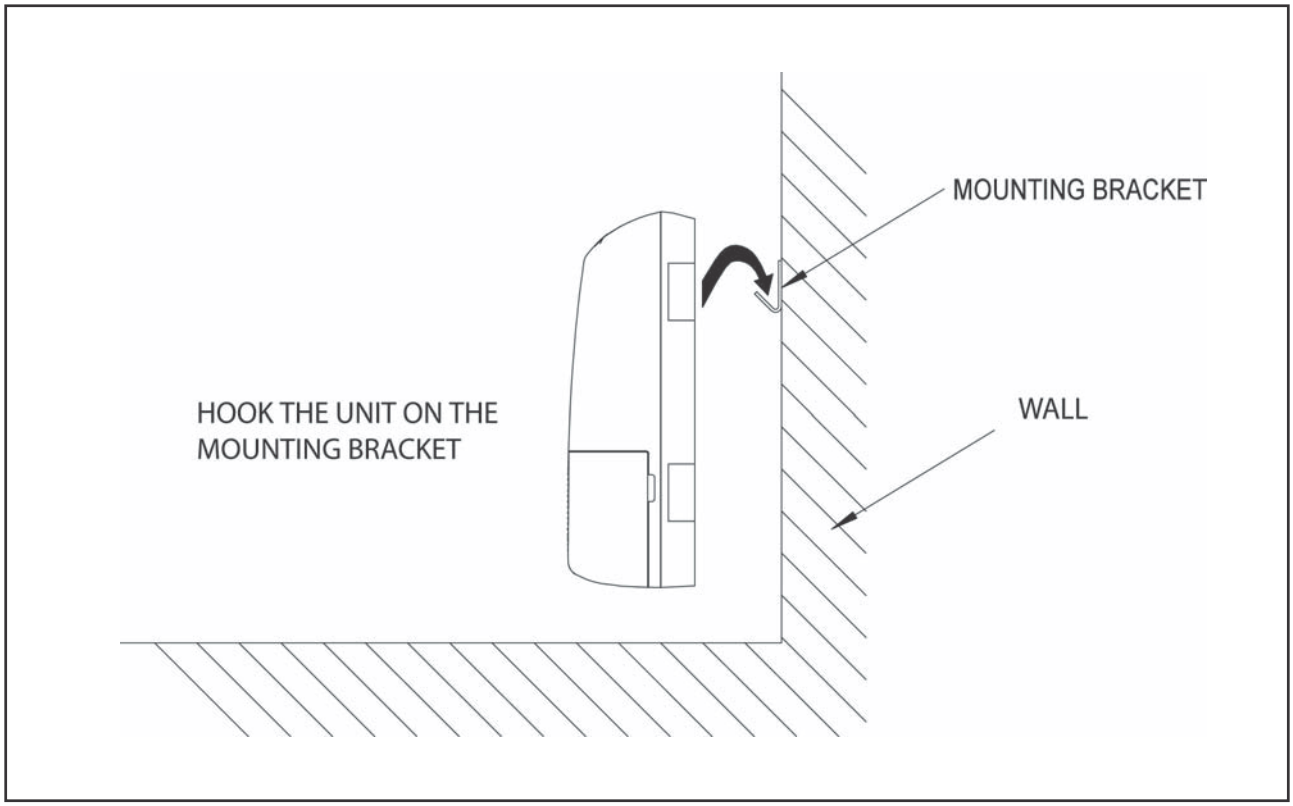




Floor standing installation



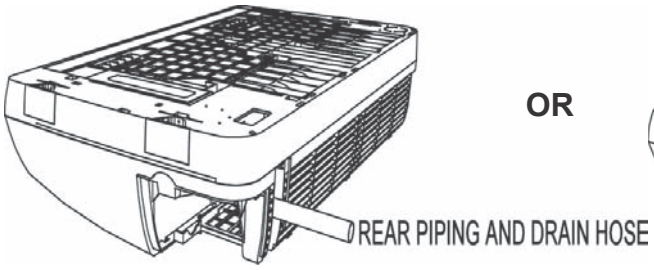
1. Refer to the dimension as illustrated when installing the mounting bracket.
2. Determine the pipe hose position using the rear piping hole. Drill the pipe hole at the slight downward slant to the outdoor side.



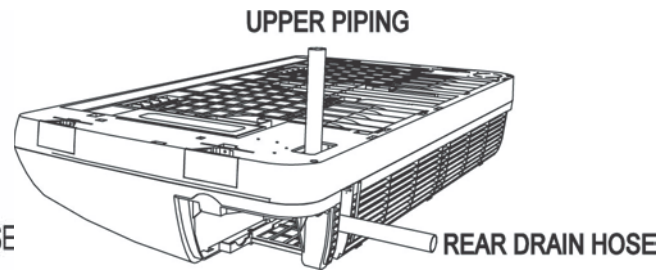
Piping and Drain Hose Installation

Under Ceiling Type

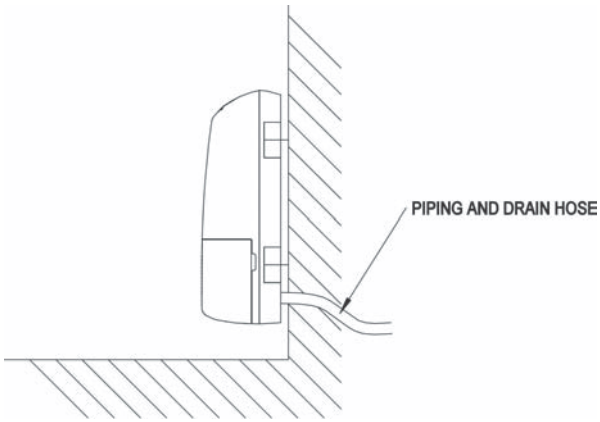
1. The piping direction can be 2 ways as illustrated.
2. The drain hose is only 1 way.



OR



Floor standing type



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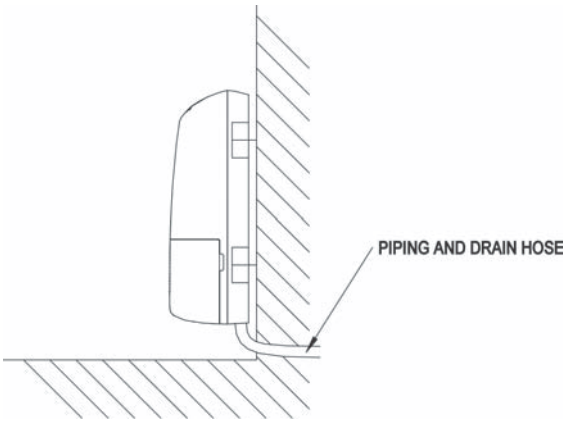
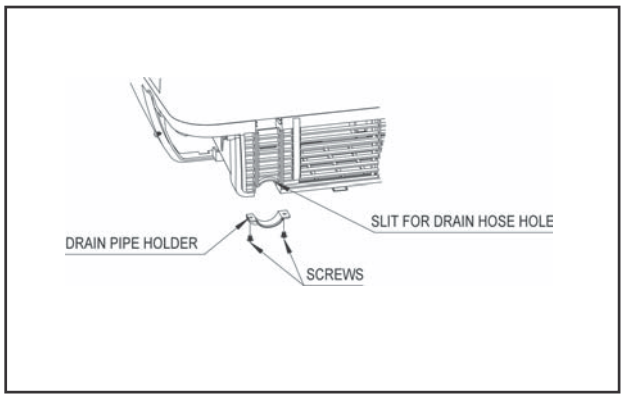
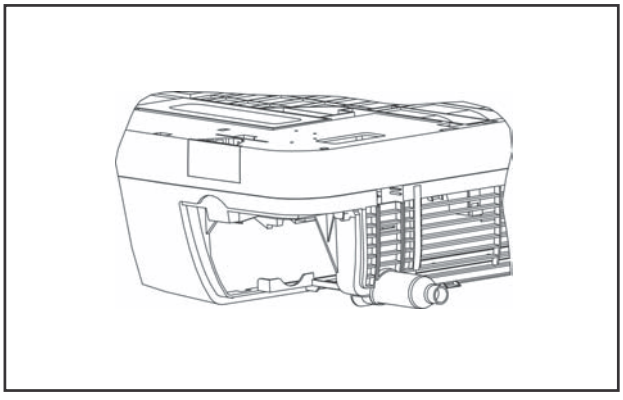


How to Install the Drain Hose

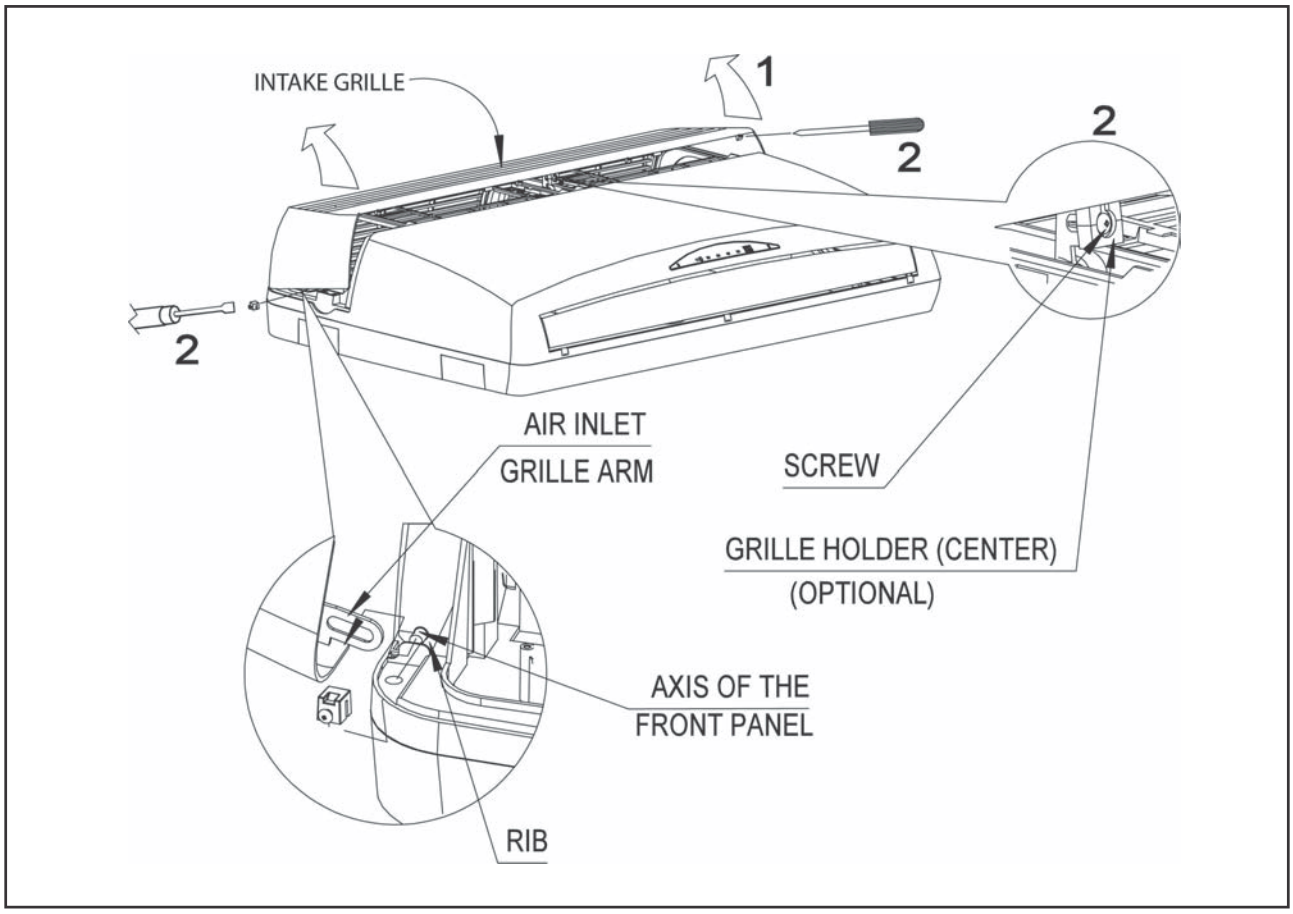
1. Remove the 2 screws and the drain pipe holder.
2. Cut a slit for the drain hose hole.
3. Place the drain hose on the v-shape area and secure it with drain pipe holder and 2 screws.

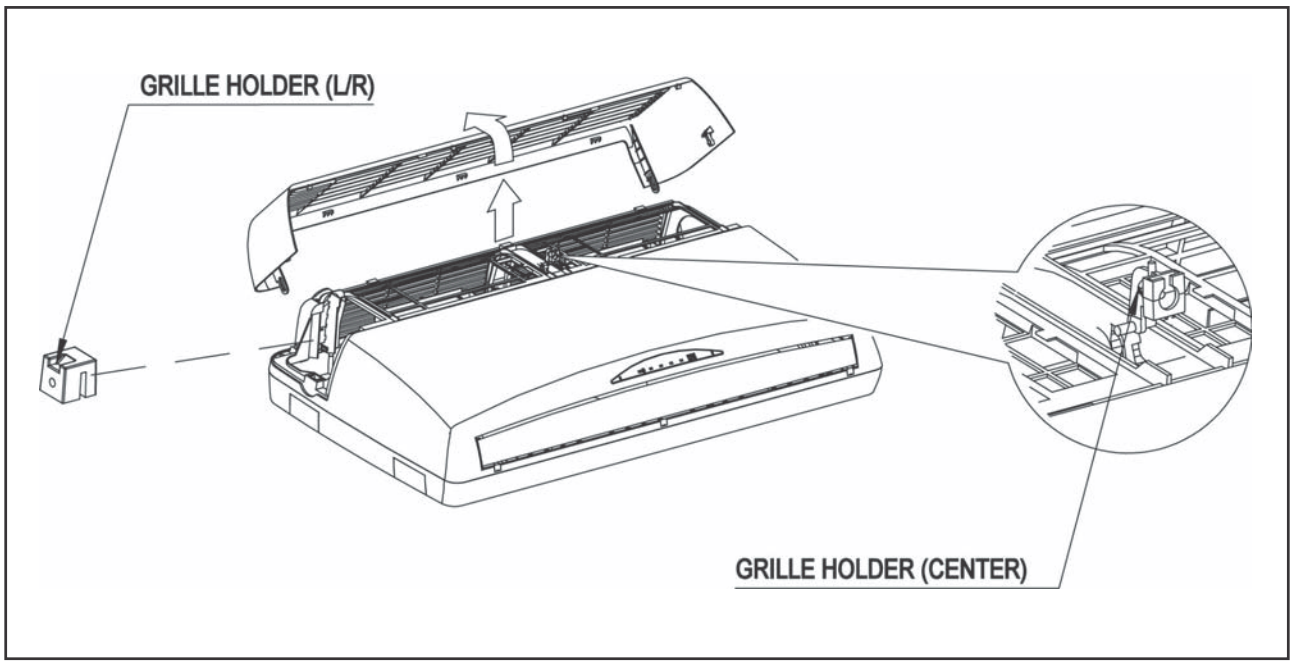




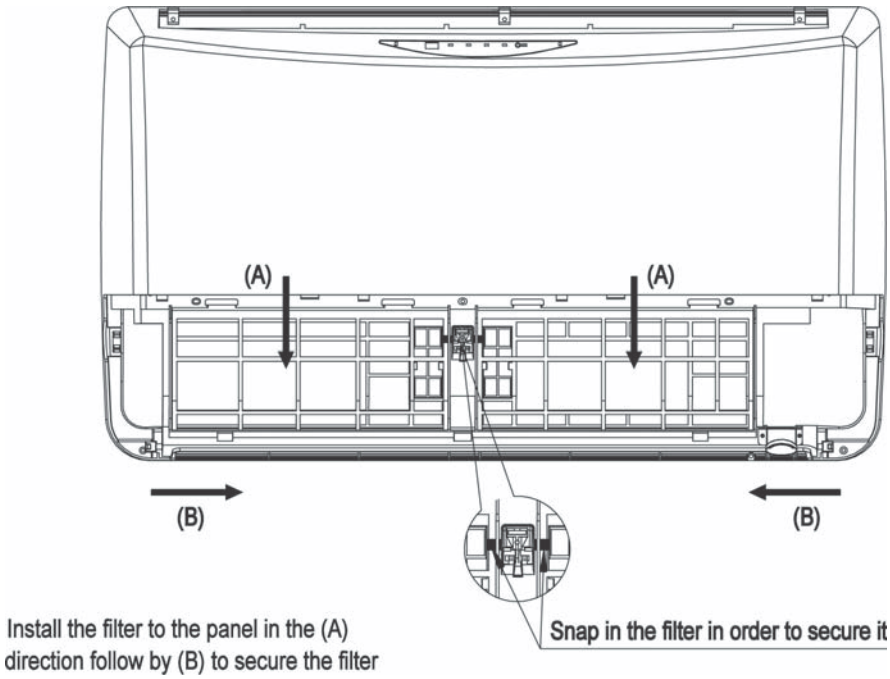
How to Remove the Air Inlet Grille

1. Remove the air inlet grille by both hands as the direction shown.
2. Loosen the screws for fixing the panel arm (3 screws - Left, Right and Center). Do not remove the screws at this time.
3. Move the air inlet grille upward, and then turn it backwards. (Do not use too much force).
4. Remove the grille holder (both left and right side). After that, remove the air intake grille.
5. Remove the grille holder (center) from the panel.



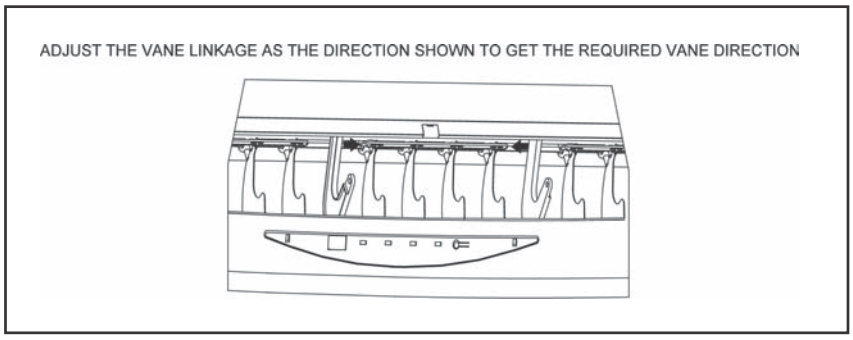


How to install the air filter

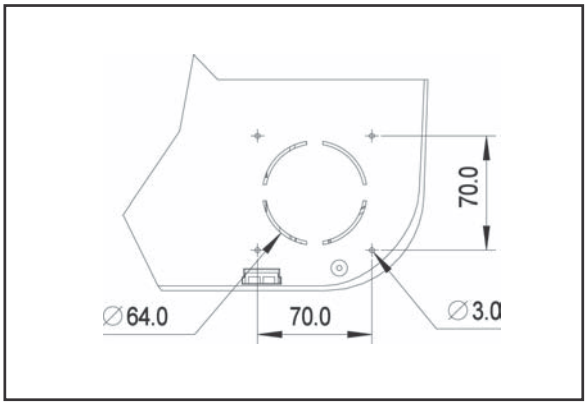

(A)
(A)
(B)
(B)
Install the filter to the panel in the (A) direction follow by (B) to secure the filter
Snap in the filter in order to secure it

To Adjust the Vane Direction

Adjust the vane linkage as the direction shown to get the required vane direction.



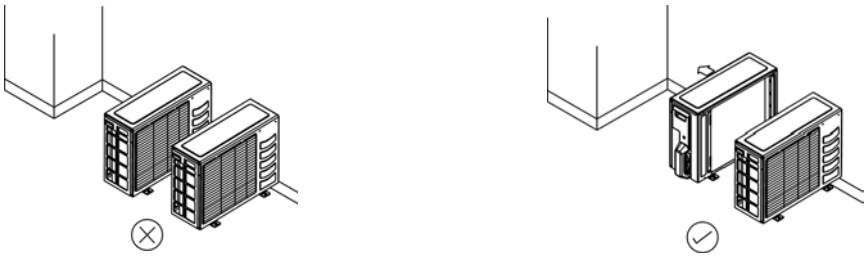
Dimension of the Fresh Air Intake Hole



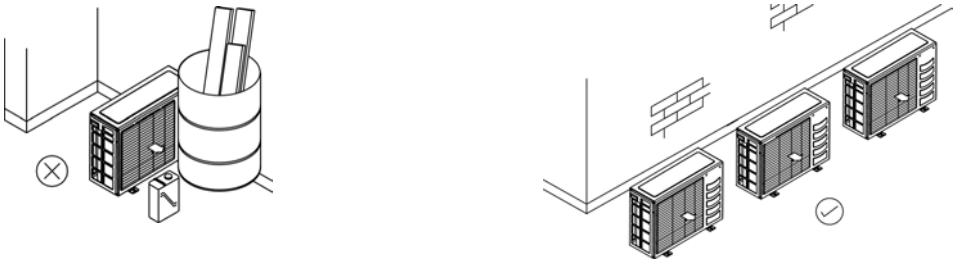
(2) INSTALLATION OF OUTDOOR UNIT

As condensing temperature rises, evaporating temperature rises and cooling capacity drops. In order to achieve maximum cooling capacity, the location selected for outdoor unit should fulfill the following requirements :

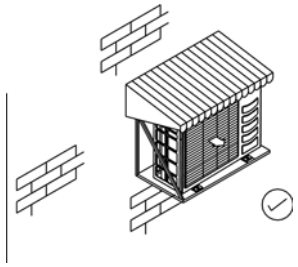
- Install the condensing (outdoor) unit in a way such that hot air distributed by the outdoor condensing unit cannot be drawn in again (as in the case of short circuit of hot discharge air). Allow sufficient space for maintenance around the unit.



- Ensure that there is no obstruction of air flow into or out of the unit. Remove obstacles which block air intake or discharge.



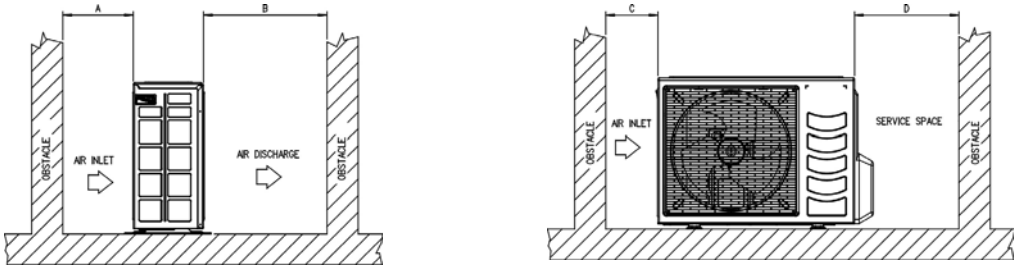
- The location must be well ventilated, so that the unit can draw in and distribute plenty of air thus lowering the condensing temperature.
- A place capable of bearing the weight of the outdoor unit and isolating noise and vibration.
- A place protected from direct sunlight. Otherwise use an awning for protection, if necessary.



- The location must not be susceptible to dust or oil mist.

INSTALLATION CLEARANCE

- Outdoor units must be installed such that there is no short circuit of the hot discharge air or obstruction to smooth air flow. Select the coolest possible place where intake air should not be hotter than the outside temperature (max. 45℃)



ALL MODELS	A	B	C	D
Minimum Distance	300 mm	1000 mm	300 mm	500 mm

CAUTION : If the condensing unit is operated in an atmosphere containing oils(including machine oils), salt(coastal area), sulphide gas(near hot spring, oil refinery plant), such substances may lead to failure of the unit.

(3) REFRIGERANT PIPING

MAXIMUM PIPING LENGTH AND MAXIMUM NUMBER OF BENDS

When the pipe length becomes too long, both the capacity and reliability drop. As the number of bends increases, system piping resistance to the refrigerant flow increases, thus lowering the cooling capacity, and as the result the compressor may become defective. Always choose the shortest path and follow the recommendation as tabulated below:

Model	Indoor	ACM / A5CM 20E/ER	ACM / A5CM 25E/ER	ACM / A5CM 28E/ER	
	Outdoor	ALC 18 / 20 C/CR, A5LC 20 C/CR	ALC / A5LC 25 C/CR	ALC / A5LC 28 C/CR	ALC 30 C/CR, A5LC 35 C/CR
Maximum Length, m		15	15	15	45
Maximum Elevation, m		8	8	8	25
Maximum No. of Bends		10	10	10	10

Piping Sizes (Flare Connection Type)

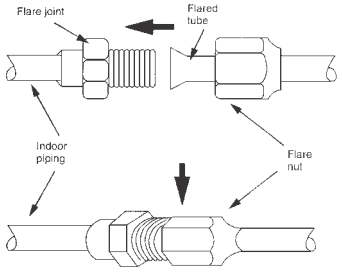
Piping sizes are as follows:

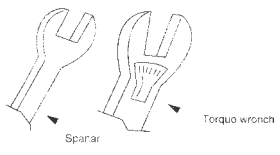
Model	ALC 18 / 20 C/CR	A5LC 20 C/CR	ALC 25 C/CR	A5LC 25 C/CR	ALC / A5LC 28 C/CR	ALC 30 C/CR, A5LC 35 C/CR
Liquid (mm/in)	6.35 / $^{1}/_{4}$	6.35 / $^{1}/_{4}$	9.52 / $^{3}/_{8}$	6.35 / $^{1}/_{4}$	9.52 / $^{3}/_{8}$	9.52 / $^{3}/_{8}$
Suction (mm/in)	15.88 / $^{5}/_{8}$	12.70 / $^{1}/_{2}$	15.88 / $^{5}/_{8}$	15.88 / $^{5}/_{8}$	15.88 / $^{5}/_{8}$	15.88 / $^{5}/_{8}$

Piping Connection to the Units

- Align the center of the piping and tighten the flare nut sufficiently with fingers.
- Finally tighten the flare nut with torque wrench unit the wrench clicks.
- When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

Pipe Size (mm/in)	Torque (Nm)
6.35 (1/4)	18
9.52 (3/8)	42
12.70 (1/2)	55
15.88 (5/8)	65
19.05 (3/4)	78





(4) WIRING

ELECTRICAL CONNECTIONS

- Wiring regulations on wire diameters differ from country to country. Please refer to your LOCAL ELECTRICAL CODES for field wiring rules. Be sure that installations comply with the rules and regulations.

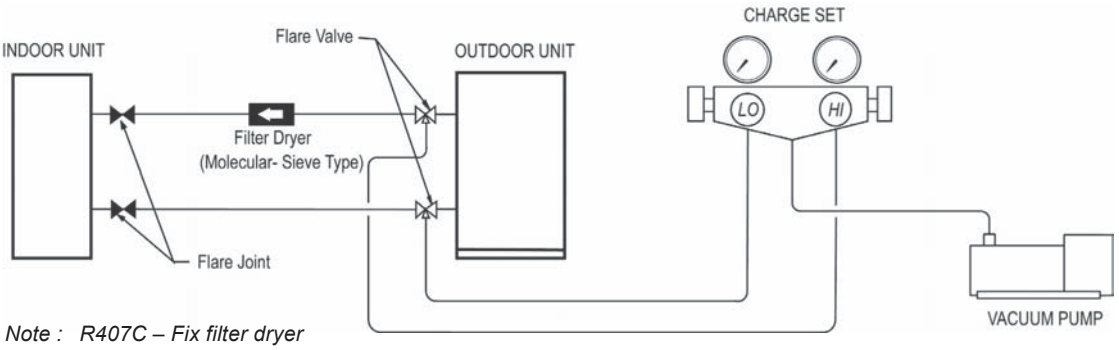
GENERAL PRECAUTIONS

- Ensure that the rated voltage of the unit corresponds to the name plate before carrying out proper wiring according to the wiring diagram.
- Provide a power outlet to be used exclusively for each unit. A power supply disconnects and a circuit breaker for over-current protection should be provided in the exclusive line.
- The unit must be **GROUNDED** to prevent possible hazards due to insulation failures.
- All wiring must be firmly connected.
- All wiring must not touch the hot refrigerant piping, compressor or any moving parts of fan motors.

(5) VACUUMING AND CHARGING

The pre-charged outdoor unit does not need any vacuuming or charging. However once it is connected, the connecting pipe line and the indoor unit need to be vacuumed before releasing the R22/R407C/R410A from the outdoor unit.

1. Open the service port core cap.
2. Connect pressure gauge to the service port.
3. Connect the line to vacuum pump. Open the charging manifold valve and turn the pump on. Vacuum to -0.1 MPa (-760mmHg) or lower. (Evacuation time varies by the pump but averagely in 1 hour).



Note : R407C – Fix filter dryer
R22 - Nil
R410A - Nil

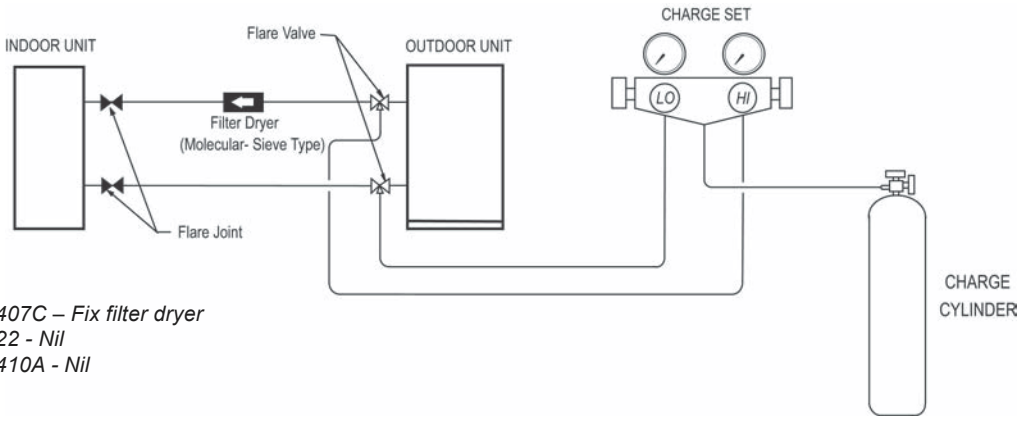
(6) ADDITIONAL CHARGE

- The refrigerant charge has already charged into the outdoor unit. For the piping length of 7.6m, additional refrigerant charge after vacuuming is not necessary.
- When the piping length is more than 7.6m, please use the table below (unit in gram).

Model	10m	15m	20m	25m	35m	45m
18/20C/CR	38 / 38	117 / 118	-	-	-	-
25C/CR	94 / 95	289 / 292	-	-	-	-
28C/CR	94 / 95	289 / 292	-	-	-	-
30C/CR	95 / 95	293 / 293	491 / 491	690 / 690	1086 / 1086	1482 / 1482

The additional refrigerant charge amount recommended is a guideline for longer piping application. The actual charge required may be different from the guideline due to different application and variation in site conditions.

Diagram shows typical charging method:



Note : R407C – Fix filter dryer
R22 - Nil
R410A - Nil

(7) OVERALL CHECKING

- Ensure the following, in particular:
  1. The unit is mounted solidly and rigid in position.
  2. Piping and connections are leak proof after charging.
  3. Proper wiring has been done.
- Drainage check – pour some water into drain pan.
- Test run
  1. Conduct a test run after water drainage test and gas leakage test.
  2. Watch out for the following:
     (a) Is the electric plug firmly inserted into the socket?
     (b) Is there any abnormal sound from the unit?
     (c) Is there any abnormal vibration with regard to the unit itself or piping?
     (d) Is there smooth drainage of water?
- Check that:
  1. Outdoor fan is running, with warm air blowing off the outdoor unit (cooling cycle).
  2. Indoor blower is running and discharge cool air (cooling cycle).
  3. Suction (low side) pressure is as per recommendations.
  4. The remote controller has incorporated a 3 minutes delay in the circuit. Thus, it requires about 3 minutes before the outdoor unit can start up.

(8) STANDARD OPERATING CONDITION

Cooling Only Unit

Temperature	T_s ˚C / ˚F	T_h ˚C / ˚F
Minimum Indoor Temperature	19.4 / 66.9	13.9 / 57.0
Maximum Indoor Temperature	26.7 / 80.1	19.4 / 66.9
Minimum Outdoor Temperature	19.4 / 66.9	13.9 / 57.0
Maximum Outdoor Temperature	46 / 114.8	24 / 75.2

Heat Pump Unit

Temperature	T_s ˚C / ˚F	T_h ˚C / ˚F
Minimum Indoor Temperature	10 / 50	-
Maximum Indoor Temperature	26.7 / 80.1	-
Minimum Outdoor Temperature	-8 / 17.6	-9 / 15.8
Maximum Outdoor Temperature	24 / 75.2	18 / 64.4

(9) SPECIAL PRECAUTIONS WHEN DEALING WITH REFRIGERANT R410A UNIT

i) WHAT IS NEW REFRIGERANT R410A?

R410A is a new HFC refrigerant which does not damage the ozone layer. The working pressure of this new refrigerant is 1.6 times higher than conventional refrigerant (R22), thus proper installation / servicing is essential.

ii) COMPONENTS

Mixture weight composition R32(50%) and R125(50%)

iii) CHARACTERISTIC

- R410A liquid and vapor components have different compositions when the fluid evaporates or condenses. Hence, when leak occurs and only vapor leaks out, the composition of the refrigerant mixture left in the system will change and subsequently affect the system performance. **DO NOT** add new refrigerant to leaked system. It is recommended that the system should be evacuated thoroughly before recharging with R410A.
- When refrigerant R410A is used, the composition will differ depending on whether it is in gaseous or liquid phase. Hence when charging R410A, ensure that only liquid is being withdrawn from the cylinder or can. This is to make certain that only original composition of R410A is being charged into the system.
- POE oil is used as lubricant for R410A compressor, which is different from the mineral oil used for R22 compressor. Extra precaution must be taken not to expose the R410A system too long to moist air.

iv) CHECK LIST BEFORE INSTALLATION/SERVICING

- Tubing
  Refrigerant R410A is more easily affected by dust of moisture compared with R22, make sure to temporarily cover the ends of the tubing prior to installation
- Compressor oil
  No additional charge of compressor oil is permitted.
- Refrigerant
  No other refrigerant other that R410A
- Tools (size of service port is different from R22 system)
  Tools specifically for R410A only (must not be used for R22 or other refrigerant)
  i) Manifold gauge and charging hose
  ii) Gas leak detector
  iii) Refrigerant cylinder/charging cylinder
  iv) Vacuum pump c/w adapter
  v) Flare tools
  vi) Refrigerant recovery machine

v) HANDLING AND INSTALLATION GUIDELINES

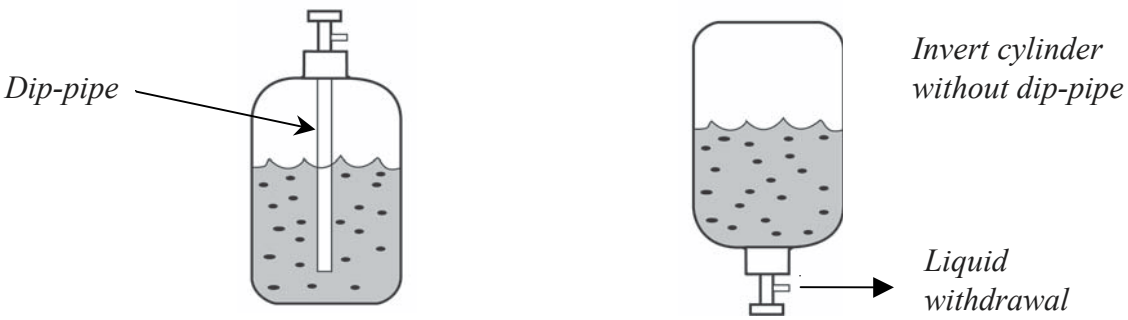
Like R22 system, the handling and installation of R410A system are closely similar. All precautionary measures; such as ensuring no moisture, no dirt or chips in the system, clean brazing using nitrogen, and thorough leak check and vacuuming are equally important requirements. However, due to its hydroscopic POE oil, additional precautions must be taken to ensure optimum and trouble free system operation.

a) During installation or servicing, avoid prolong exposure of the internal part of the refrigerant system to moist air. Residual POE oil in the piping and components can absorb moisture from the air.

b) Ensure that the compressor is not expose to open air for more than the recommended time specified by its manufacturer (typically less than 10 minutes). Removed the seal plugs only when the compressor is about to be brazed.

c) The system should be thoroughly vacuumed to 1.0 Pa (700mmHg) or lower. This vacuuming level is more stringent than R22 system so as to ensure no incompressible gas and moisture in the system.

d) When charging R410A, ensure that only liquid is being withdrawn from the cylinder or can. This is to ensure that only the original composition of R410A is being delivered into the system. The liquid composition can be different from the vapor composition.



f) Normally, the R410A cylinder or can is being equipped with a dip pipe for liquid withdrawal. However, if the dip pipe is not available, invert the cylinder or can so as to withdraw liquid from the valve at the bottom.

12. SERVICING AND MAINTENANCE

Warning : Disconnect from main supply before servicing the air conditioner

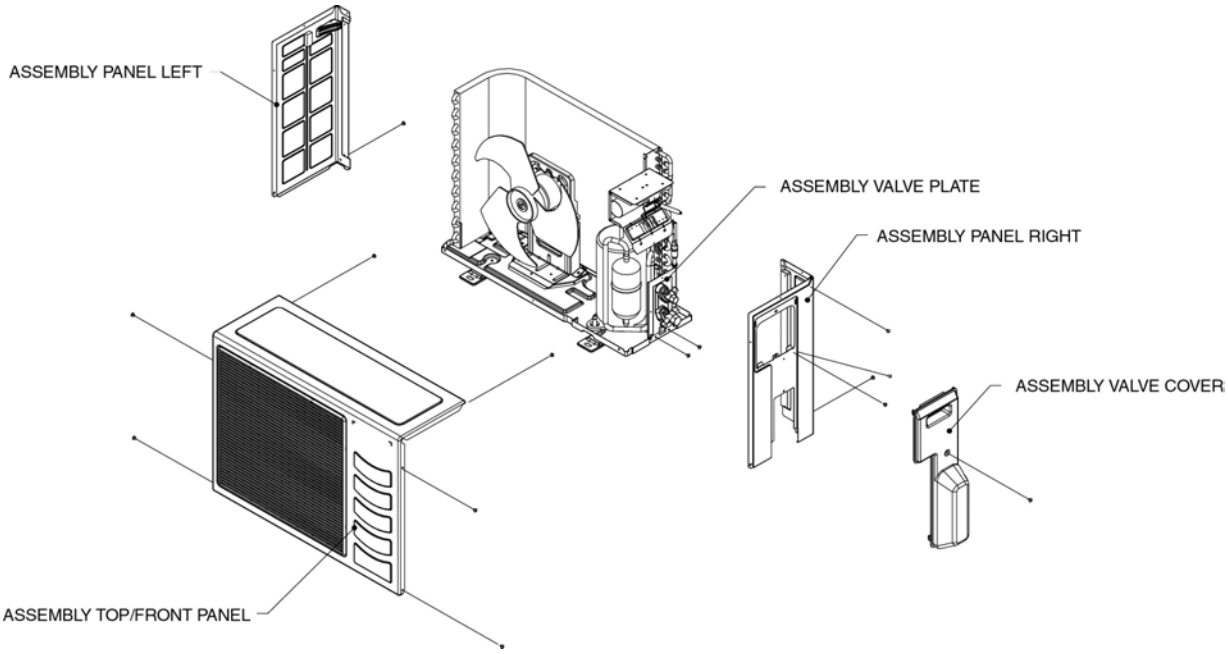
The unit is designed to give long life operation with minimum maintenance required. However, it should be regularly checked and the following items should be given due attention.

Components	Maintenance Procedure	Recommended Schedule
Indoor Air Filter	1. Remove any dust adhering on the filter by using a vacuum cleaner or wash in lukewarm water (below 40°C/104°F) with a neutral cleaning detergent. 2. Rinse the filter well and dry before placing it back onto the unit. 3. **Note :Do not use gasoline, volatile substances or chemicals to clean the filter.**	At least once every 2 weeks. More frequently if necessary.
Indoor Unit	1. Clean any dirt or dust on the grille or panel by wiping it with a soft cloth soaked in lukewarm water (below 40°C/104°F) and a neutral detergent solution. 2. **Note : Do not use gasoline, volatile substances or chemicals to clean the indoor unit.**	At least once every 2 weeks. More frequently if necessary
Condensate Drain Pan and Pipe	1. Check and clean.	Every 3 months.
Indoor Fan	1. Check for unusual noise.	As necessary.
Indoor/Outdoor Coil	1. Check and remove dirt which are clogged between fins. 2. Check and remove obstacles which hinder air flow in and out of indoor/outdoor unit.	Every month. Every month.
Electrical	1. Check voltage, current and wiring. 2. Check faulty contacts caused by loose connections, foreign matters, etc.	Every 2 months. Every 2 months.
Compressor	1. No maintenance needed if refrigerant circuit remains sealed. However, check for refrigerant leak at joints and fittings.	Every 6 months.
Compressor Lubrication	1. Oil is factory charged. Not necessary to add oil if circuit remains sealed.	No maintenance required.
Fan Motors Lubrication	1. All motors pre-lubricated and sealed at factory.	No maintenance required.

PRE START UP MAINTENANCE
(AFTER EXTENDED SHUTDOWN)

- Inspect thoroughly and clean indoor and outdoor units.
- Clean or replace air filters.
- Clean condensate drain line.
- Clean clogged indoor and outdoor coils.
- Check fan imbalance before operation.
- Tighten all wiring connections and panels.
- Check for refrigerant leakage.

The design of the ALC outdoor series allows servicing to be carried out readily and easily. The removal of the top/front and back panel make almost every part accessible.



Under normal circumstances, these outdoor units only require a check and cleaning of air intake coil surface once quarterly. However, if a unit is installed in areas subjected to much oil mist and dust, the coils must be regularly cleaned by qualified Air Conditioner Service Technicians to ensure sufficient heat exchange and proper operation. Otherwise, the systems life span may be shortened.

CAUTION!

Do not charge OXYGEN, ACETYLENE OR OTHER FLAMMABLE and poisonous gases into the unit when performing a leakage test or an airtight test. These gases could cause severe explosion and damage if exposed to high temperature and pressure.
It is recommended that only nitrogen or refrigerant be charged when performing the leakage or airtight test.

13. TROUBLESHOOTING

When a malfunction of the air conditioner unit is detected, immediately switch off the main power supply before proceeding with the following troubleshooting procedures.
The following are common fault conditions and simple troubleshooting tips. If any other fault conditions which are not listed occur, contact your nearest local dealer. DO NOT attempt to troubleshoot the unit by yourself.

No	Fault conditions	Possible causes / corrective actions
1	The air conditioner unit will not resume after power failure.	• The auto restart function is not functioning. Please turn on the unit with the wireless / wired controller.
2	The compressor does not operate 3 minutes after the air conditioner unit is started.	• Protection against frequent starting. • Wait for 3 or 4 minutes for the compressor to start operating by it self.
3	The airflow is too slow or room cannot be cooled sufficiently.	• The air filter is dirty. • The doors and windows are opened. • The air suction and discharge of both indoor and outdoor units are clogged or blocked. • The regulated temperature or temperature setting is not low enough.
4	Discharge airflow has bad odor.	• Cigarettes, smoke particles, perfume and others, which might have adhered onto the coil, may cause odor. • Contact your nearest dealer.
5	Condensation on the front air grille of the indoor unit.	• This is caused by air humidity after an extended period of operation. • The set temperature is too low. Increase the temperature setting and operate the unit at high fan speed.
6	Water flowing out from the air conditioner.	• Switch off the unit and contact your nearest dealer. This might be due to tilted installation.
7	Hissing airflow sound from the air conditioner unit during operation.	• Liquid refrigerant flowing into the evaporator coil.
8	The wireless controller display is dim.	• The batteries are discharged. • The batteries are not correctly inserted. • The assembly is not good.
9	Compressor operates continuously.	• Dirty air filter. Clean the air filter. • Temperature setting too low (cooling). Use higher temperature setting. • Temperature setting too high (heating), Use lower temperature setting.
10	No cool air comes out during cooling cycle, or no hot air comes out during heating cycle.	• Temperature setting too high (cooling). Use lower temperature setting. • Temperature setting too low (heating). Use higher temperature setting.
11	On heating cycle, warm air does not come out.	• Unit is in defrost mode. Heating operation will resume after defrost cycle ends.

Diagnostic Guidelines

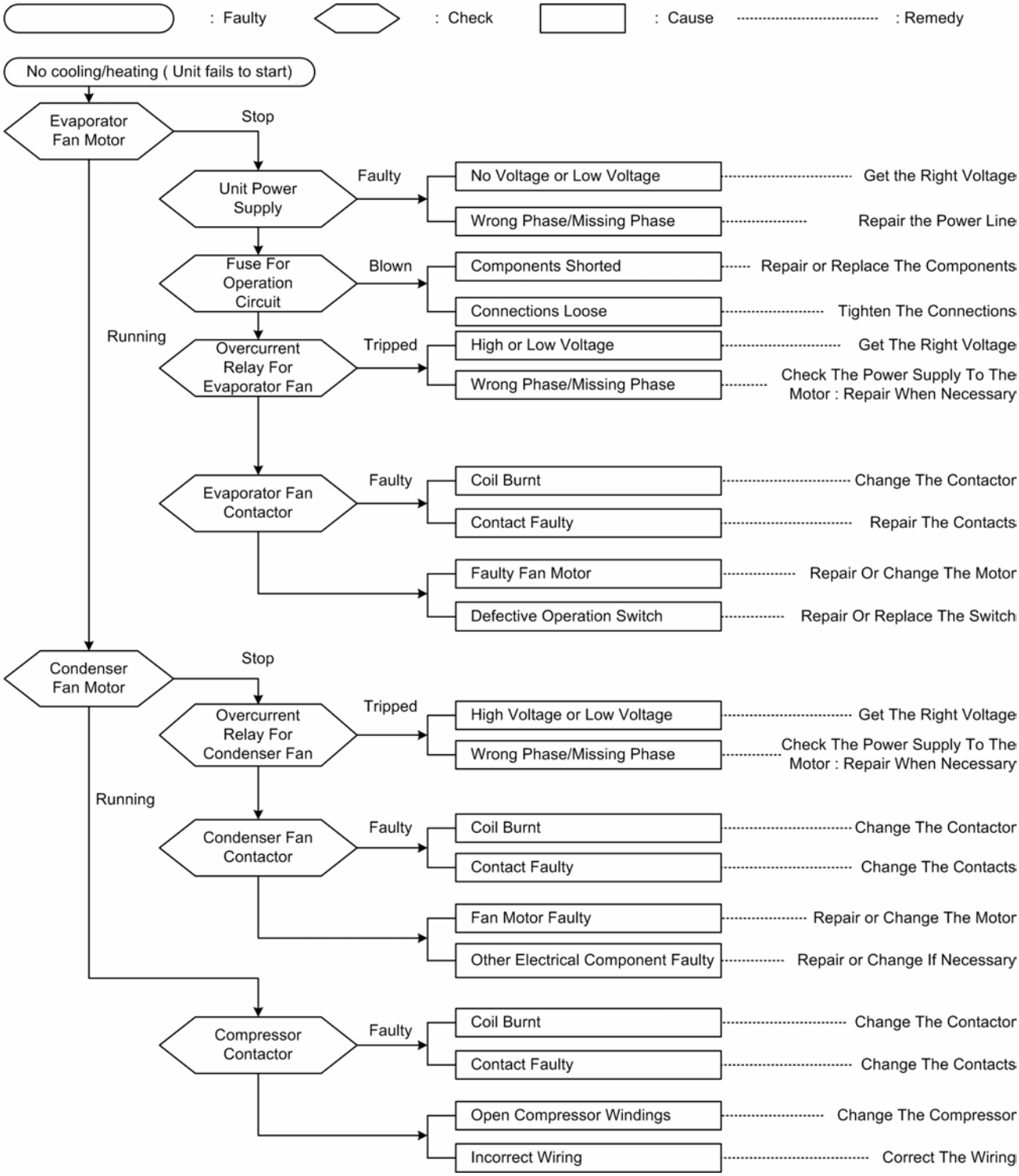
By means of pressure reading:

Data / Circuit	Pressure					Probable cause
	Too low	A little low	Normal	A little high	Too high	
High side **Low side**					● ●	1. Overcharged with refrigerant. 2. Non-condensable gases in refrigerant circuit (e.g. air) 3. Obstructed air-intake / discharge. 4. Hot air short circuiting in outdoor unit.
High side **Low side**	●				●	1. Poor compression / no compression (compressor defective) 2. Reversing valve leaking.
High side **Low side**	 ●	●				1. Undercharged with refrigerant. 2. Refrigerant leakage. 3. Air filter clogged / dirty (indoor unit). 4. Indoor fan locked / seized. 5. Defective defrost control, outdoor coil freeze up (heating). 6. Outdoor fan locked / seized (heating).
High side **Low side**				 ●	●	1. Outdoor fan blocked (cooling). 2. Outdoor coil dirty (cooling). 3. Indoor fan locked / seized (heating). 4. Indoor air filter clogged / dirty (heating). 5. Non-condensable gases in refrigerant circuit (e.g. air)
High side **Low side**				●	 ●	1. Air intake temperature of indoor unit too high.

By means of diagnostic flow chart:

Generally, there are two kinds of problems, i.e. starting failure and insufficient cooling/heating. “Starting failure” is caused by electrical defect while improper application or defects in refrigerant circuit causes “Insufficient cooling / heating”.

i) Diagnosis of Electric Circuit

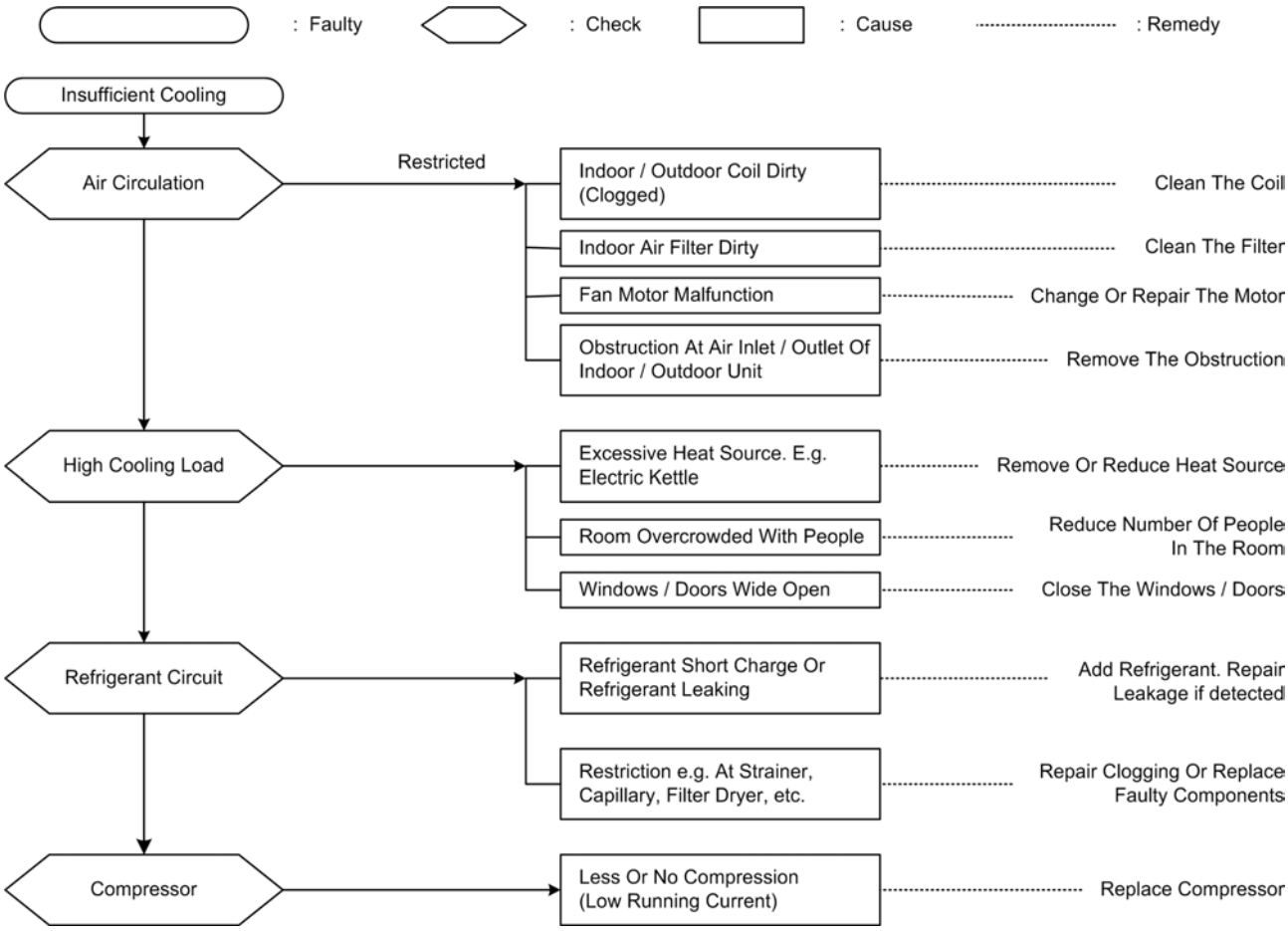


The most common causes of air conditioner failure to “start” are :

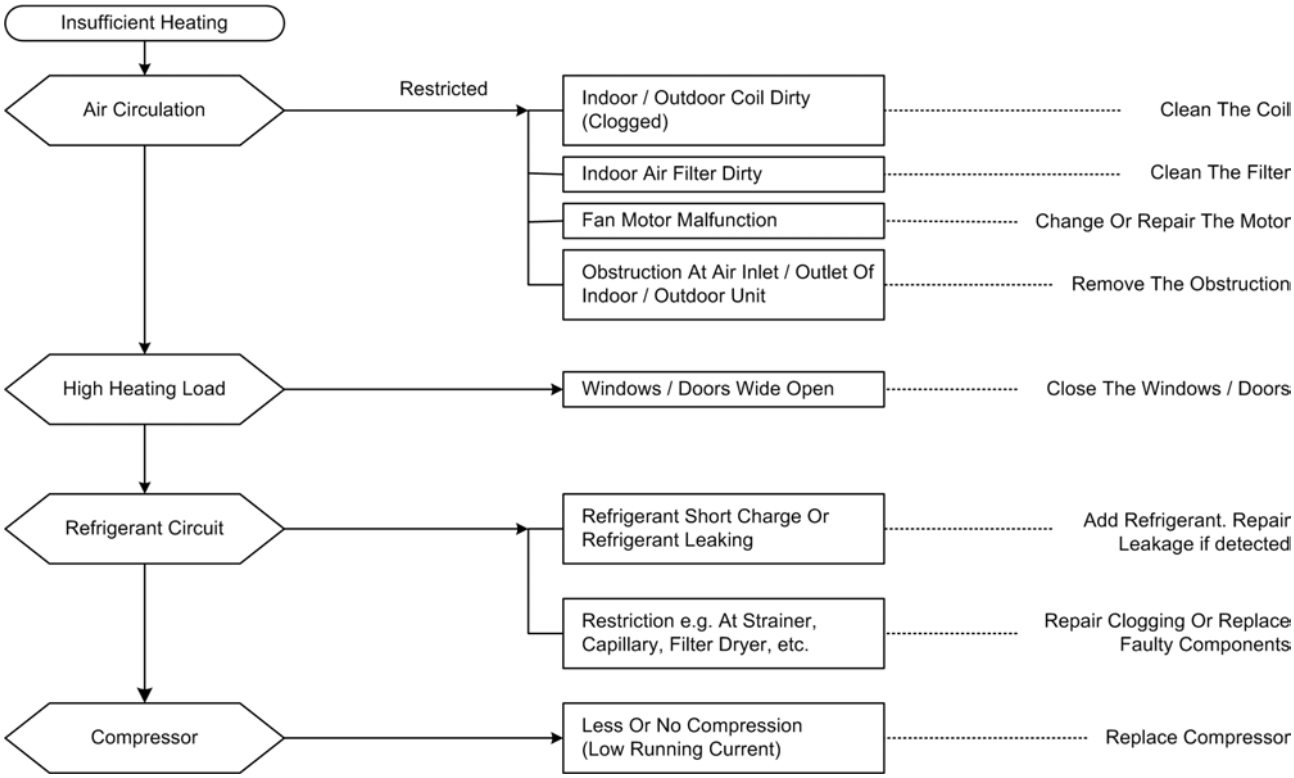
a) Voltage not within ±10% of rated voltage.
b) Power supply interrupted.
c) Improper control settings.
d) Air conditioner is disconnected from main power source.
e) Fuse blown or circuit breaker off.

ii) Diagnosis of Refrigerant Circuit / Application

There might be some causes where the unit starts running but does not perform satisfactorily, i.e. insufficient cooling. Judgement could be made by measuring temperature difference of indoor unit's intake and discharge air as well as running current.


: Faulty
: Check
: Cause
: Remedy
Insufficient Cooling
Air Circulation
Restricted
Indoor / Outdoor Coil Dirty (Clogged)
Clean The Coil
Indoor Air Filter Dirty
Clean The Filter
Fan Motor Malfunction
Change Or Repair The Motor
Obstruction At Air Inlet / Outlet Of Indoor / Outdoor Unit
Remove The Obstruction
High Cooling Load
Excessive Heat Source. E.g. Electric Kettle
Remove Or Reduce Heat Source
Room Overcrowded With People
Reduce Number Of People In The Room
Windows / Doors Wide Open
Close The Windows / Doors
Refrigerant Circuit
Refrigerant Short Charge Or Refrigerant Leaking
Add Refrigerant. Repair Leakage if detected
Restriction e.g. At Strainer, Capillary, Filter Dryer, etc.
Repair Clogging Or Replace Faulty Components
Compressor
Less Or No Compression (Low Running Current)
Replace Compressor

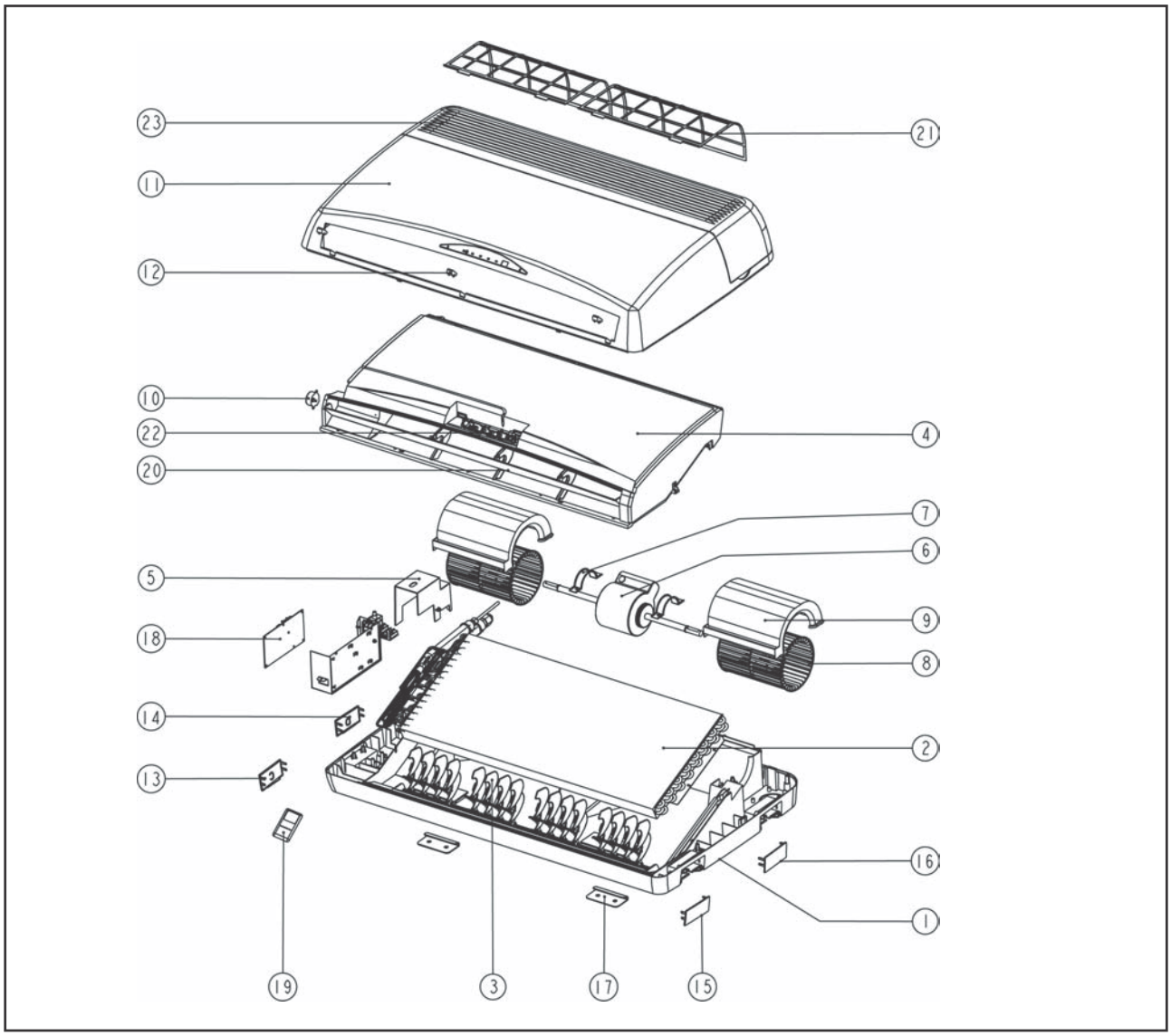
Satisfactory operation with temperature difference of air intake & discharge of indoor unit 8°C to 13°C. *
(* value is for reference only)


Insufficient Heating
Air Circulation
Restricted
Indoor / Outdoor Coil Dirty (Clogged)
Clean The Coil
Indoor Air Filter Dirty
Clean The Filter
Fan Motor Malfunction
Change Or Repair The Motor
Obstruction At Air Inlet / Outlet Of Indoor / Outdoor Unit
Remove The Obstruction
High Heating Load
Windows / Doors Wide Open
Close The Windows / Doors
Refrigerant Circuit
Refrigerant Short Charge Or Refrigerant Leaking
Add Refrigerant. Repair Leakage if detected
Restriction e.g. At Strainer, Capillary, Filter Dryer, etc.
Repair Clogging Or Replace Faulty Components
Compressor
Less Or No Compression (Low Running Current)
Replace Compressor

Satisfactory operation with temperature difference of air intake & discharge of indoor unit 14°C to 20°C. *
(* value is for reference only)

14. EXPLODED VIEW & PARTS LIST

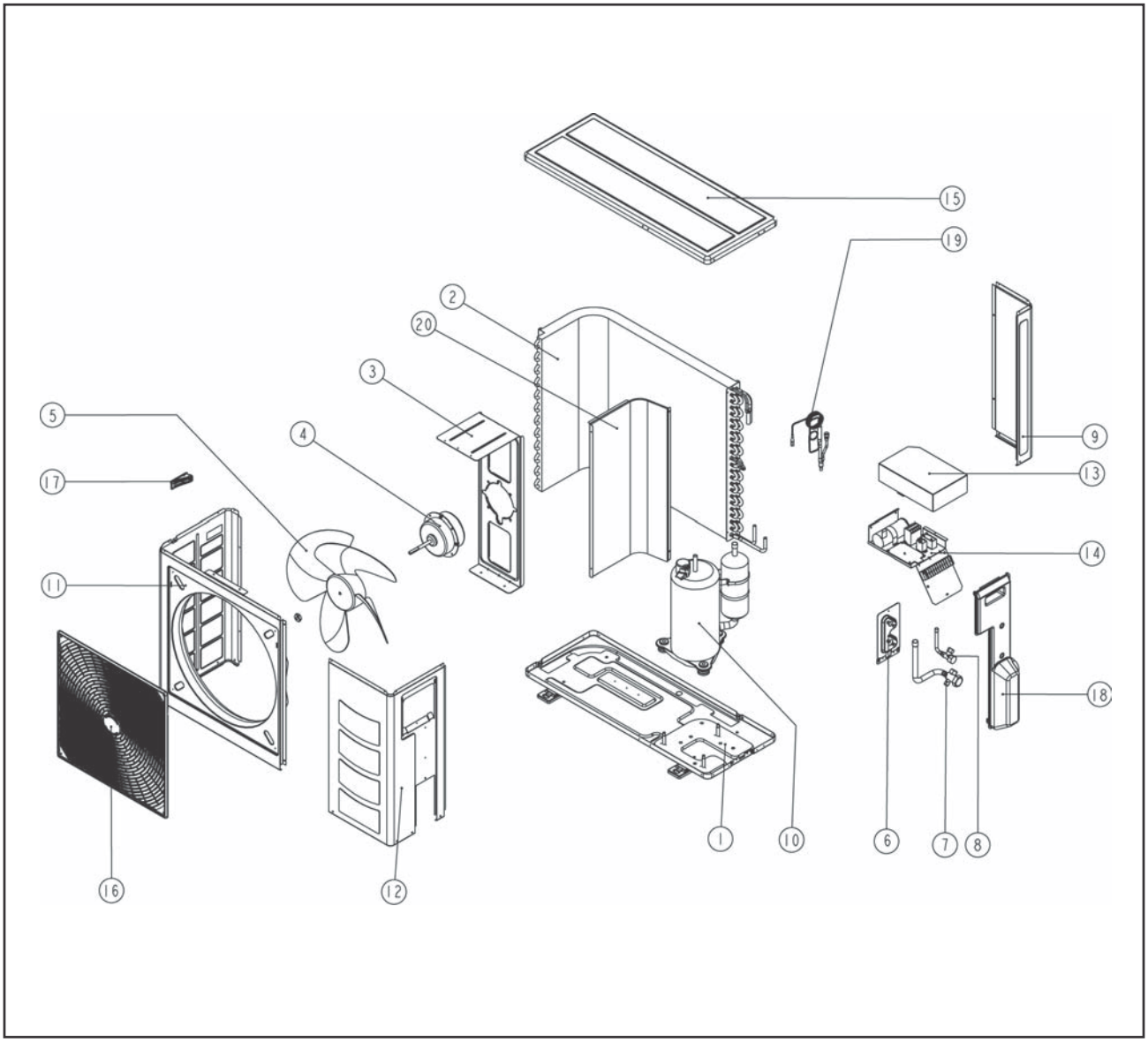
MODEL: A5CM 20/25/28E/ER



No	Description	Part No
1	Assy., Top Panel	A50124074907
2	Assy., Coil	
	ACM 20E/ER, A5CM 25E/ER	A50024071828
	A5CM 20E/ER	A50024080385
	ACM 25E/ER, ACM 28ER, A5CM 28E/ER	A50024074757
	ACM 28E	A50024075729
3	Assy., Vane	A50124074906
4	Assy., Drain Pan	
	ACM / A5CM 20/25/28E	A50124076123
	ACM / A5CM 20/25/28ER	A50124080076
5	Assy., Control Box	
	ACM / A5CM 20/25/28E (IONIZER)	A50044083484
	ACM / A5CM 20/25/28E (NTP)	A50044083700
	ACM / A5CM 20/25ER (IONIZER)	A50044080078
	ACM / A5CM 20/25ER (NTP)	A50044083701
	ACM / A5CM 28ER (IONIZER)	A50044080079
	ACM / A5CM 28ER (NTP)	A50044083702
6	Cover, Control Box	A01014069872
7	Motor	
	ACM / A5CM 20E/ER	A03039023304
	ACM / A5CM 25E/ER	A03039023305
	ACM / A5CM 28E/ER	A03039023306
8	Motor, Bracket	A01014071324

No	Description	Part No
9	Blower Wheel	A03024004754
10	Blower Housing	A12014071385
11	Motor, Air Swing	A03039023303
12	Assy., Bottom Panel	A50124074909
13	Cap, Screw	
14	Cover, Hanger L1 (C)	A12014071354
15	Cover, Hanger L2 (D)	A12014071355
16	Cover, Hanger R1 (A)	A12014071356
17	Cover, Hanger R2 (B)	A12014071357
18	Mounting Bracket	A01014071319
19	Control Module	
	ACM / A5CM 20/25/28E (IONIZER)	A04089023399
	ACM / A5CM 20/25/28E (NTP)	A04089023670
	ACM / A5CM 20/25/28ER (IONIZER)	A04089023668
	ACM / A5CM 20/25/28ER (NTP)	A04089023667
20	G12 Handset (Cooling Only)	A04084065327
	G12 Handset (Heatpump)	A04084067315
21	Louver	A12014071335
22	Saranet Filter	A12014071342
23	Assy., LED Board	
	ACM / A5CM 20/25/28E	A50044076124
	ACM / A5CM 20/25/28ER	A50044080080
24	Air Intake Grille	A12014071341

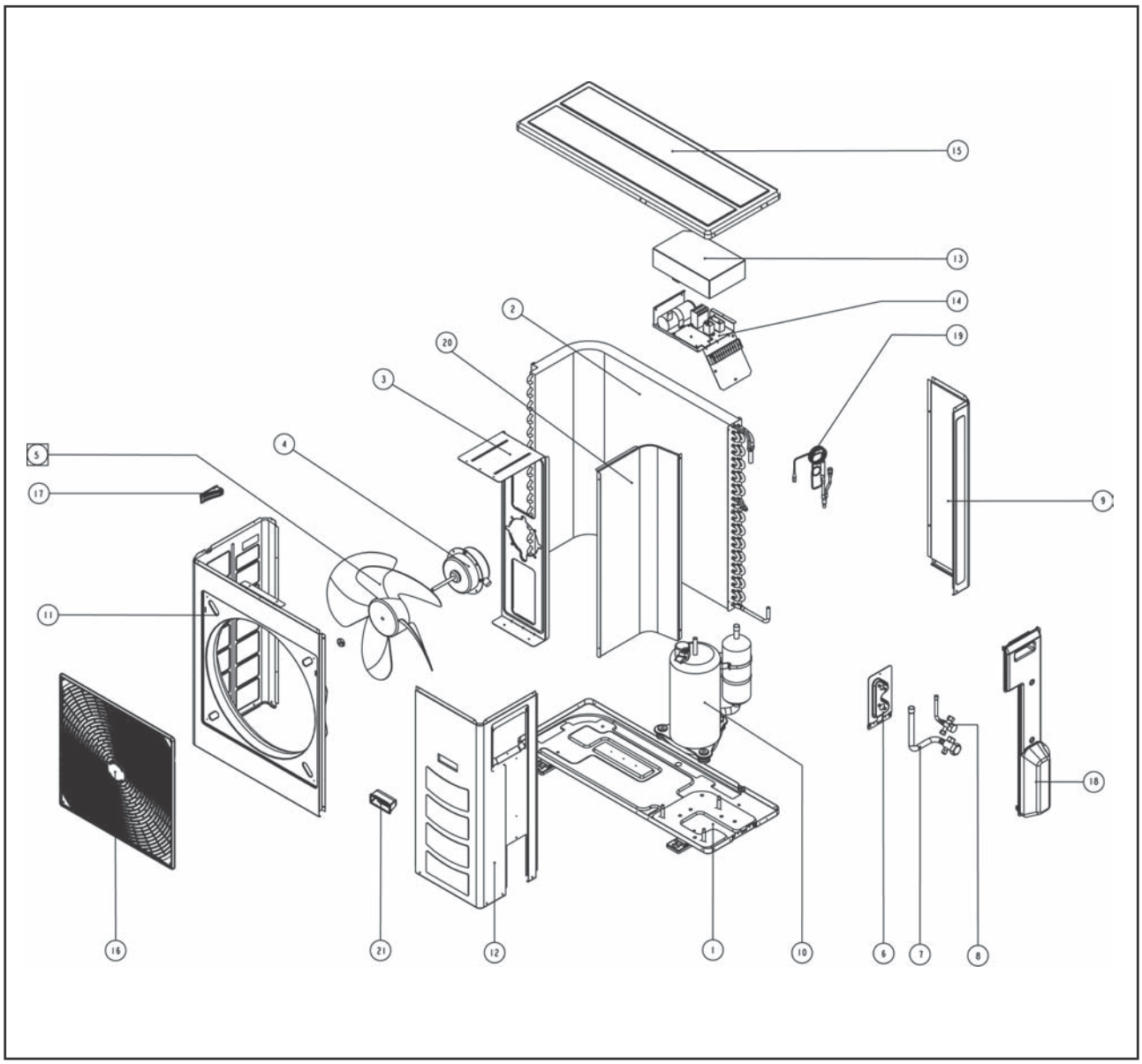
MODEL: A5LC 20C



No	Description	Part No
1	Assy. Base Pan	
	ALC 18C	A50014077978
	ALC 20C	A50014013884
	A5LC 20C	A50014078281
2	Assy. Outdoor Coil	
	ALC 18C	A50024077968
	ALC 20C	A50024070651
	A5LC 20C	A50024079078
3	Motor Bracket	A01014070601
4	Fan Motor	
	ALC 18C	A03039024539
	ALC / A5LC 20C	A03039023391
5	Fan Blade	A03019023393
6	Valve Bracket	
	ALC 18/20C	A50014072861
	A5LC 20C	A50014078280
7	ALC 18/20C	
	Assy. Flare Valve 3 Ways 5/8"	A50054072863
	A5LC 20C	
	Assy. Flare Valve 3 Ways 1/2"	A50059023335
8	Assy. Flare Valve 2 Ways 1/4"	
	ALC 18/20C	A50059022156
	A5LC 20C	A50059023334

No	Description	Part No
9	Back Panel, Right	A01014070599
10	Compressor	
	ALC 18C	A50049022614
	ALC 20C	A04019018334
	A5LC 20C	A04019021361
11	Front Panel, Left	A01014070597
12	Service Panel	A01014070598
13	Terminal Cover Panel	A01014070838
14	Assy. Control Panel	
	ALC 18C	A50044077990
	ALC 20C	A50044073902
	A5LC 20C	A50044072876
15	Top Panel	A01014070596
16	Assy. Front Grille	A50124072880
17	Plastic Handle	A12014057948
18	Assy. Valve Cover	A50124072885
19	Assy. Cap Tube	
	ALC 18C	A50024077976
	ALC 20C	A50024077257
	A5LC 20C	A50024079156
20	Partition	A01014070603

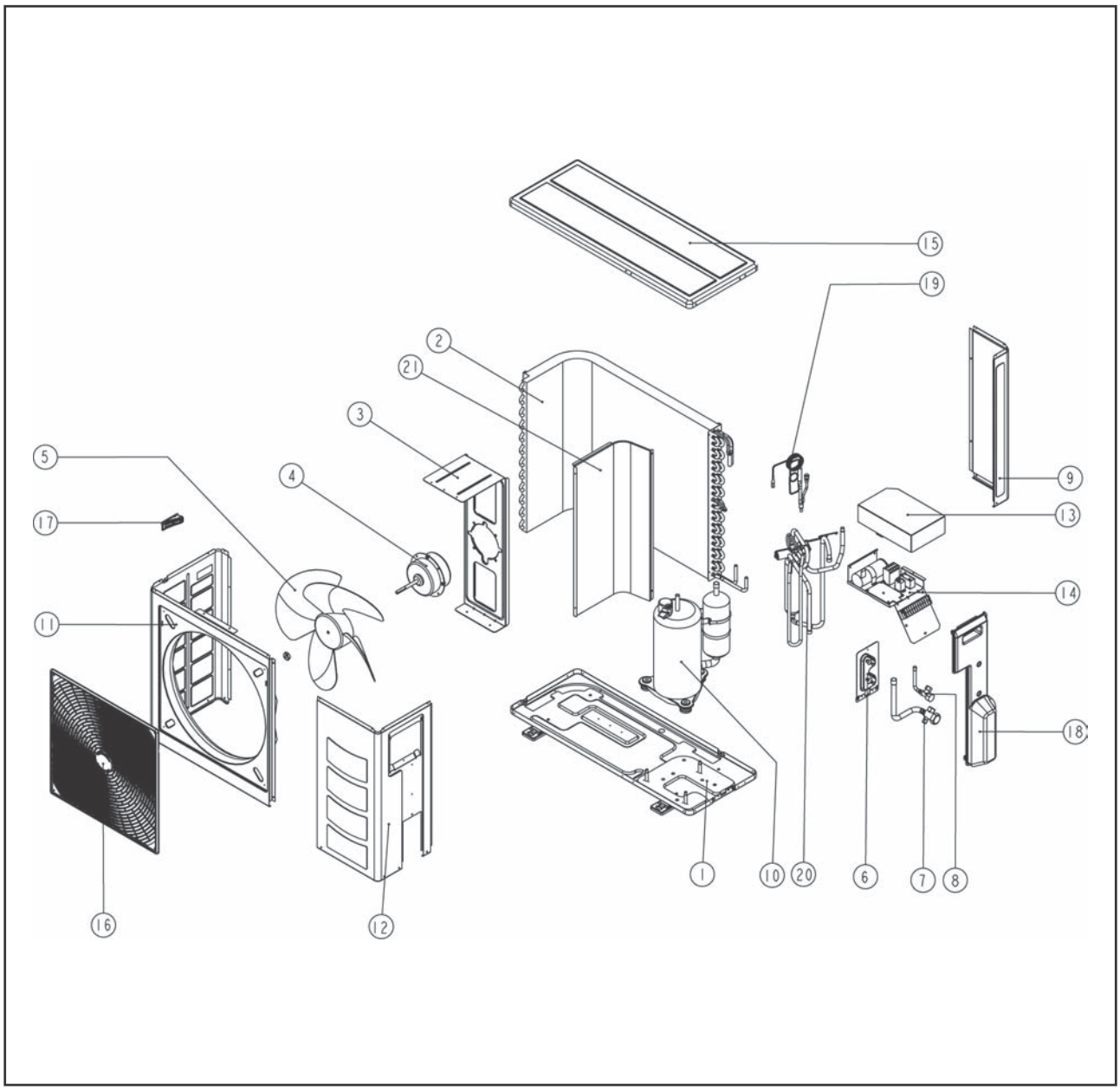
MODEL: A5LC 25 / 28C



No	Description	Part No
1	Assy. Base Pan	A50014073884
2	Assy. Outdoor Coil	
	ALC 25/28C	A50024070959
	A5LC 25C/28C	A50024079238
3	Motor Bracket	A01014070948
4	Fan Motor	
	ALC / A5LC 25C	A03039023391
	ALC / A5LC 28C	A03039024538
5	Fan Blade	A03019023393
6	Valve Bracket	
	ALC 25/28C	A50014073890
	A5LC 25C	A50014078321
	A5LC 28C	A50014080371
7	Assy. Flare Valve 3 Ways 5/8"	
	ALC 25/28C	A50054072863
	A5LC 25C/28C	A50059023336
8	ALC25/28C	
	Assy. Flare Valve 2 Ways 3/8"	A50059022577
	A5LC 25C	
	Assy. Flare Valve 2 Ways 1/4"	A50059023334
	A5LC 28C	
	Assy. Flare Valve 3 Ways 3/8"	A50059024820

No	Description	Part No
9	Back Panel, Right	A01014070950
10	Compressor	
	ALC 25C	A04019019032
	ALC 28C	A04019012828
	A5LC 25/28C	A04019020449
11	Front Panel, Left	A01014070947
12	Service Panel	A01014070949
13	Terminal Cover Panel	A01014070838
14	Assy. Control Panel	
	ALC / A5LC 25C	A50044073902
	ALC 28C	A50044080172
	A5LC 28C	A50044080648
15	Top Panel	A01014070596
16	Assy. Front Grille	A50124072880
17	Plastic Handle, Side	A12014057948
18	Assy. Valve Cover	A50124073905
19	Assy. Cap Tube	
	ALC 25C	A50024073895
	A5LC 25C	A50024078311
	A5LC 28C	A50024079593
20	Partition	A01014070951
21	Plastic Handle, Front	A12014070955

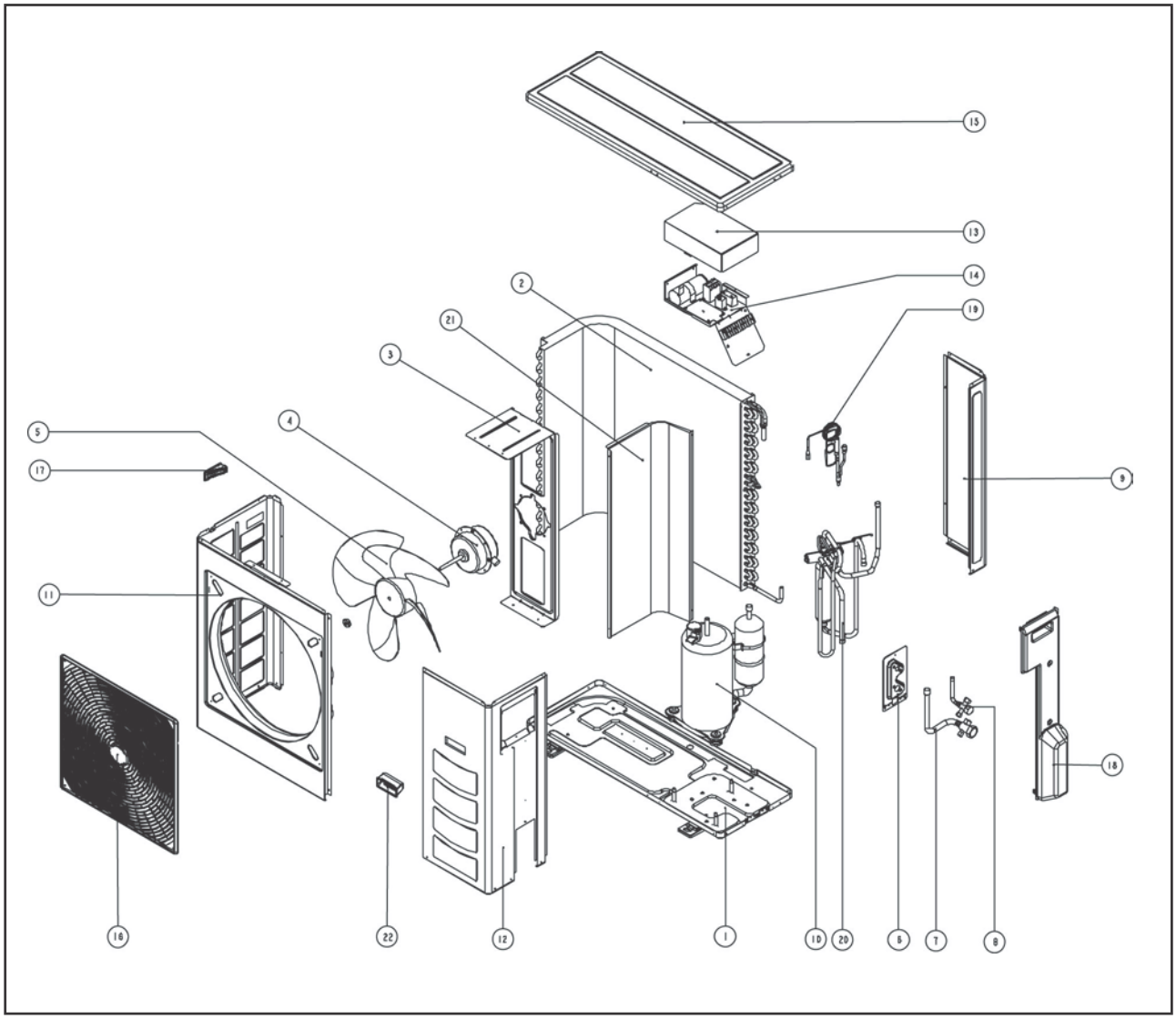
MODEL: A5LC 20CR



No	Description	Part No
1	Assy. Base Pan	
	ALC 20CR	A50014073884
	A5LC 20CR	A50014078281
2	Assy. Outdoor Coil	
	ALC 20CR	A50024077089
	A5LC 20CR	A50024075143
3	Motor Bracket	A01014070601
4	Fan Motor	A03039023391
5	Fan Blade	A03019023393
6	Valve Bracket	
	ALC 18/20CR	A50014072861
	A5LC 20CR	A50014078280
7	ALC 18/20CR	
	Assy. Flare Valve 3 Ways 5/8"	A50054072863
	A5LC 20CR	
	Assy. Flare Valve 3 Ways 1/2"	A50059023335
8	Assy. Flare Valve 2 Ways 1/4"	
	ALC 18/20CR	A50059022156
	A5LC 20CR	A50059023334
9	Back Panel, Right	A01014070599

No	Description	Part No
10	Compressor	
	ALC 20CR	A04019018334
	A5LC 20CR	A04019021361
11	Front Panel, Left	A01014070597
12	Service Panel	A01014070598
13	Terminal Cover Panel	A01014070838
14	Assy. Control Panel	
	ALC 20CR	A50044077198
	A5LC 20CR	A50044077200
15	Top Panel	A01014070596
16	Assy. Front Grille	A50124072880
17	Plastic Handle	A12014057948
18	Assy. Valve Cover	A50124072885
19	Assy.Cap Tube	
	ALC 20CR	A50024076304
	A5LC 20CR	A50024078285
20	Assy. 4 Way Valve	
	ALC 20CR	A05019004158
	A5LC 20CR	A50024078253
21	Partition	A01014070603

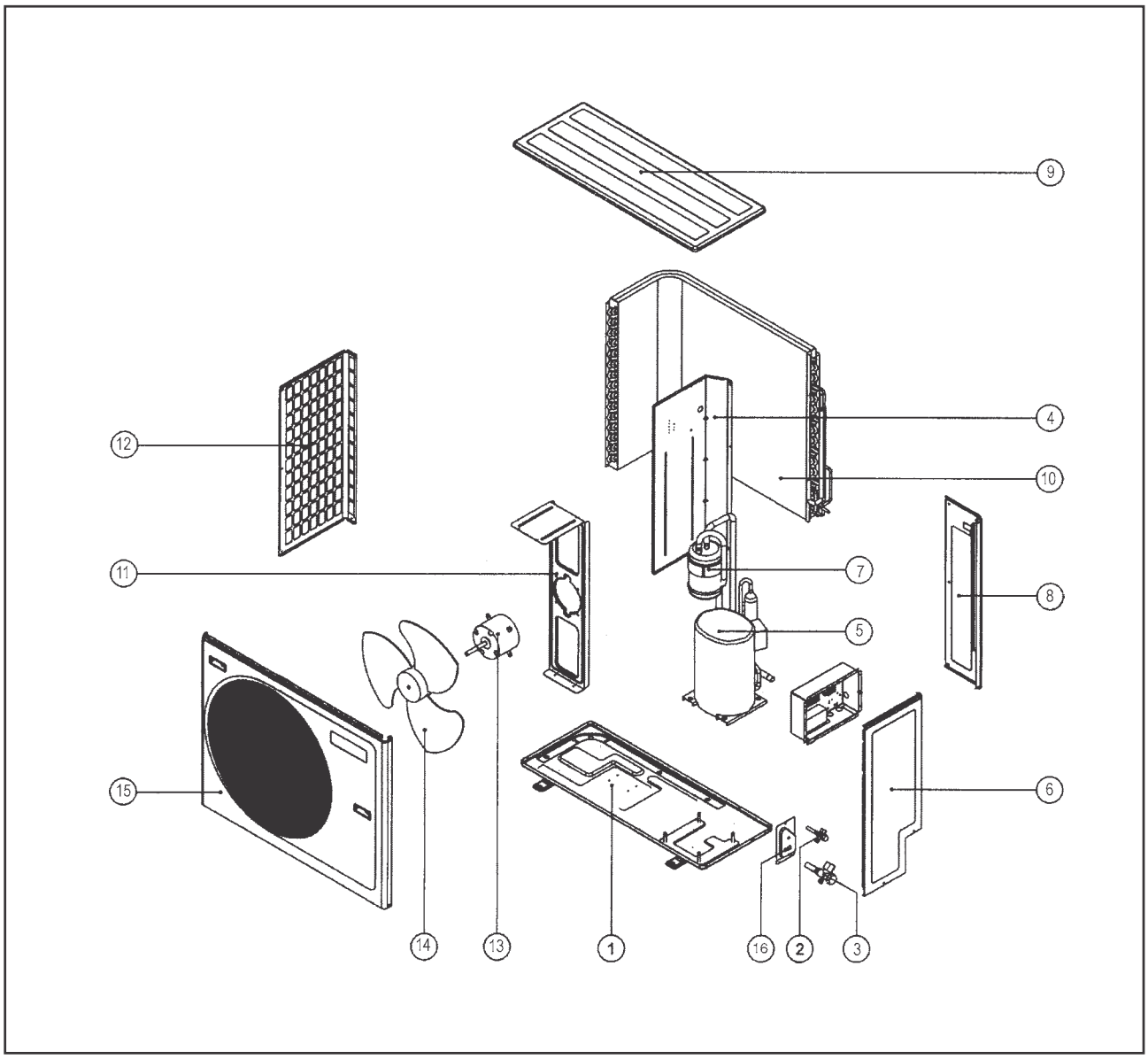
MODEL: A5LC 25 / 28CR



No	Description	Part No
1	Assy. Base Pan	A50014073884
2	Assy. Outdoor Coil	
	ALC 25/28CR	A50024077092
	A5LC 25/28CR	A50024075147
3	Motor Bracket	A01014070948
4	Fan Motor	
	ALC / A5LC 25CR	A03039023391
	ALC / A5LC 28CR	A03039024538
5	Fan Blade	A03019023393
6	Valve Bracket	
	ALC 25/28CR	A50014073890
	A5LC 25CR	A50014078321
	A5LC 28CR	A50014080371
7	Assy. Flare Valve 3 Ways 5/8"	
	ALC 25/28CR	A50054072863
	A5LC 25C/28CR	A50059023336
8	ALC25/28CR	
	Assy. Flare Valve 2 Ways 3/8"	A50059022577
	A5LC 25CR	
	Assy. Flare Valve 2 Ways 1/4"	A50059023334
	A5LC 28CR	
	Assy. Flare Valve 3 Ways 3/8"	A50059024820
9	Back Panel, Right	A01014070950

No	Description	Part No
10	Compressor	
	ALC 25CR	A04019019032
	A5LC 25/28CR	A04019020449
	ALC 28CR	A04019012828
11	Front Panel, Left	A01014070947
12	Service Panel	A01014070949
13	Terminal Cover Panel	A01014070838
14	Assy. Control Panel	
	ALC / A5LC 25CR	A50044077198
	ALC 28CR	A50044080649
	A5LC 28CR	A50044080650
15	Top Panel	A01014070596
16	Assy. Front Grille	A50124072880
17	Plastic Handle, Side	A12014057948
18	Assy. Valve Cover	A50124073905
19	Assy.Cap Tube	
	ALC 25CR	A50024077286
	A5LC 25CR	A50024078311
	ALC 28CR	A50024080186
	A5LC 28CR	A50024080312
20	Assy. 4 Way Valve	
	ALC 25/28CR	A05019004158
	A5LC 25/28CR	A50059024520
21	Partition	A01014070951
22	Plastic Handle, Front	A12014070955

MODEL: A5LC 35 C/CR



No	Description	Part No
1	Assy. Base Pan	A50014053238
2	Assy. Flare Valve 3/8"	
	ALC 30C/CR	A50059000221
	A5LC 35C/CR	A50059017536
3	Assy. Flare Valve 5/8"	
	ALC 30C/CR	A50059000071
	A5LC 35C/CR	A50059020805
4	Panel, Partition	A50014053277
5	Compressor	
	ALC 30C/CR	
	220-240V / 1Ph / 50Hz	A50049013221
	380-415V / 3Ph / 50Hz	A50049019889
	A5LC 35C/CR	A50049025336
6	Service Panel	A01010029898
7	Accumulator	
	ALC 30C/CR	A02114013198
	A5LC 35C/CR	A02119024262
8	Back Panel, Right	A01014053233
9	Top Panel	A01011029900

No	Description	Part No
10	Assy. Coil	
	ALC 30C	A50024041851
	ALC 30CR	A50024035282
	A5LC 35CR	A50024082878
11	Bracket, Fan Motor	A01014053232
12	Side Panel, Left	A01010029899
13	Fan Motor	A03039004046
14	Fan Blade	A03013028160
15	Assy. Front Panel	A50014053236
16	Plate, Flare Vlave	A01013034235
Parts Not Shown in Diagram		
	Phase Sequencer	A04089017029
	Assy. Terminal Box	
	A5LC 35C	A50044082803
	A5LC 35CR	A50044082801
	Cover, Terminal Box	A01014029893
	High Pressure Switch	
	ALC 30C/CR	A04109015136
	A5LC 35C/CR	A04104061879
	Low Pressure Switch	
	ALC 30C	A04109015125
	A5LC 35C/CR	A04109015400

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